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SHRUBBERIES AND THEIR MANAGEMENT.

NEXT to the contour of the ground it is the trees and shrubs of a garden and their arrangement that give to it its broad effects. If the trees and shrubs are not themselves the chief objects of interest there, they must, in all but the smallest areas, form at least the setting of whatever else the garden may contain. Whatever the picture may be, it is the arboreal vegetation that makes the framing. Therefore it is strange that in so many gardens one should see such striking evidence of the absence of any special thought or care for the trees and shrubs they contain.

How seldom one sees that there has been any endeavour to obtain the most suitable species for the place or the most beautiful and interesting subjects; in other words, any attempt to draw upon that wealth of material which modern travel, enterprise, and skill have brought to us. Who does not know that depressing thing—the ordinary "mixed shrubbery"—a crowded mass of shrubs, with here and there perhaps a tree, where all the weaker species have disappeared, and in which the stronger are left to fight each other for light and space? The result is that what remains is a survival perhaps of the strongest, but certainly not the most beautiful. If it were not that we see them any day of one's life in the making in the gardens and public parks of this country, we might hope that this type of shrubbery was a relic of less enlightened days.

It is easy to trace its origin and development. A student of human nature would probably say the "mixed shrubbery" we rail against is only one more evidence of the evils of procrastination. At the time of planting the material is naturally small, and in the hope of producing an immediate effect the plants are put in rather closely together. This, of course, is perfectly right, but too often the work stops there. Plants do not cry aloud, and they grow while we are sleeping. When the time comes that they are closing up and ought to be given more space, the work is passed by in favour of something seemingly more needful, but probably really less important. For when once the proper season has passed by it becomes increasingly difficult to treat the shrubbery satisfactorily. The plants become drawn and their sides thin, and any interference with them means, at the least, a temporary unsightliness. The remedy for all this is to be found in the adoption of a definite plan at the commencement and its rigorous carrying out afterwards. And here a few words may be devoted to the

ARRANGEMENT AND PLANTING

of trees and shrubs. When either a tree or a shrub is to be grown as an isolated specimen with plenty of space for its development, as on lawns or in parks, it has simply to be considered in its present and ultimate relationship to the general features of the landscape. Its natural increase in size and height does not involve transplanting and re-arrangement. It is, however, quite otherwise with the cultivated shrubbery, which, either large or small, forms so important a part of every garden. Such shrubberies are used to mask the boundaries of gardens and to make secondary boundaries within the garden itself; they are useful in forming dividing lines between plots where special cultures are carried on; as backgrounds to borders of herbaceous plants, as shelterbelts, and so on. The point is that wherever it is, or whatever its special object may be, it should not be merely a block of monotonous greenery serving no other purpose than to shut out a view. It should be, in itself, as much an object of beauty and interest as any other part of the garden.

The initial mistake that is so often made in the planting of shrubberies is the indiscriminate mixing up of the material employed. The value of what we know as grouping—that is the bringing together of several individuals of one kind, or even of two or more kinds that enhance each other's attractions—is not generally appreciated.

Without attempting a psychological explanation of the fact, it seems that the eye derives the greatest pleasure when a tree or shrub (but more especially a shrub) is seen either perfectly isolated or when it helps to compose a group made up, chiefly or wholly, of several specimens of the same species. This is even more the case with beds cut out on lawns than it is of continuous shrubberies. Here the indiscriminate mixture looks its worst, and here more than anywhere else should an arrangement of shrubs, be it of one or more species, strike a clear note. For large gardens and spacious areas I prefer, myself, the grouping together of individuals of the same kind; in smaller areas a combination of two or more may be desirable or necessary. But, to borrow a musical illustration, one should never strike all the notes of the octave at once—it should be either a single note or a chord. Take, as an example, what is one of the noblest pieces of shrub-grouping in any public garden in the British Isles—the Rhododendron Dell at Kew. No doubt this owes much of its beauty to the contour of the ground, but one cannot conceive any mixed arrangement of shrubs, however beautiful they might individually be, so impressive and effective as this massing of Rhododendrons, only relieved here and there by the introduction of a few dissimilar things.

In the case of shrubs of medium and small size and, indeed, of almost all the smaller species we cultivate, it is essential, if their beauty and individuality are to be revealed to the full, that this system of grouping should be adopted. The size of such groups must be regulated in consideration of several circumstances. The chief of these is the dimensions attained by the plant itself. The smaller it is, the smaller, of course, should be the group. Then one has to consider the extent of the shrubbery or garden of which it forms a part, and the other things with which it is in immediate association. In large gardens and in large shrubberies broad, massive effects can be obtained that would be out of place where the general scheme is on smaller lines. In grouping it is necessary to observe the strictest sense of proportion.

The massing of shrubs has one advantage that should be adverted to. It simplifies the management and reduces the labour of keeping the shrubbery in order. Presuming that the plants were first set closely enough together to pretty nearly cover the ground and produce an immediate effect, when the time comes—as it soon will—that more space is necessary for each specimen, it can easily be afforded by a judicious thinning out. The trouble and expense of an entire replanting are avoided. If, however, either through neglect or deliberate choice the shrubs are allowed to remain as originally planted the crowding does little harm. Each group becomes, as it were, one plant, and the general effect is not spoilt as so often it is where the shrubbery degenerates into a featureless jumble.

A FEW EXAMPLES

may be given of effective combinations of shrubs. Where a group consists of but one species no problems of course arise, but where two or more are used some thought must be given as to colour, diversity of habit, rates of growth, and time of flowering.

The double-flowered Gorse planted in a mass, with a few Tamarix tetrandra sprinkled among them, makes a pleasing group. The plants flower at the same time, and the graceful feathery branches of the Tamarisk laden with lilac-coloured flowers rising out of the solid mass of yellow Gorse form an effective contrast.

For yellow-flowered shrubs the common Mahonia (Berberis aquifolium) is a very useful associate. Forsythia suspensa, for instance, which is charming anywhere, has its attractiveness enhanced if it rises out of a mass of this dark purplish-leaved shrub. The same may be said of the early-flowering species of Hamamelis. Naked of foliage themselves, at the flowering time they need either a background or an undergrowth such as is afforded by a dark evergreen. Jasminum nudiflorum associated with the Mahonia will often make a very pretty winter picture. Indeed, a thin arrangement of deciduous flowering shrubs rising out of a dwarf evergreen mass is always pleasing.

A very striking feature in a garden may be made by associating together in a broad mass a collection of shrubs having variegated and coloured leaves. Here variety is desirable. A mass of Pissard's Plum alone, with its dark purple foliage, is heavy and unattractive, but associated with white variegated shrubs like Cornus mas variegata and Acer Negundo variegatum, or with yellow leaved ones like Cornus Spàthii and Acer Negundo odessanum, and the beauty of all is brought out and enhanced.

The True Mixed Shrubbery.

There is, of course, another type of shrubbery which also has its own distinct attractions. This is where each individual plant has to stand on its own merits and where no attempt is made to produce broad or imposing effects by associating together a number of similar plants. This plan has, perforce, to be adopted where the space available is restricted and where the taste of the planter leads him to prefer variety rather than beauty merely. Such an arrangement appeals with special force to the *connoisseur*, and is the one which makes the small private garden most interesting. But it is unquestionable that such a shrubbery is not so easily managed as the one where the grouping system is adopted. It gets out of hand quicker and demands more persistent attention. Each plant, in order that it may show its true character and beauty, must attain to a certain minimum size and needs a certain space for its development to that size. But both the plant and its neighbours keep on growing, and it consequently becomes necessary to keep them within certain limits by pruning, or else to provide room for their enlargement by an occasional thinning and re-arrangement. Such a shrubbery ought never to be allowed to get crowded, otherwise the individuality of each plant is lost. A "loose" arrangement should be maintained. It is because shrubberies made on this plan are so often neglected, and the coarse growing plants so often allowed to crush out the weaker species, that I advocate the grouping system wherever possible. For public parks it is decidedly the best, as it is also for large private gardens or, indeed, wherever sufficient space is available for planting on broad lines.

It would be absurd to suggest that any one with a small garden should make what little shrubbery they may have consist of masses of a few things merely. But I am inclined to think that even in a small garden, if the planter is using for his shrubbery ten or a dozen of (say) Berberis stenophylla, or Forsythia, or Mezereon, or whatever it may be, he will do better to make a group of each sort than to sprinkle them over the whole length of his border. It is, indeed, for new shrubberies that the grouping system is so desirable. In old, well-managed ones, planted in the mixed style, each plant is attaining, or has attained, its full size, and produces somewhat the same effect as a group of younger ones. Here, at any rate, dignity is not lacking. But nothing can look more feeble than the common "mixed" shrubbery in the early years of its being. *W. J. Bean.*

TREATMENT OF CANKER IN APPLE TREES.

Where the trees are growing in a heavy, clayey sub-soil, canker is most destructive, but during the past few years we have been trying to keep it under, and have to some degree succeeded. When planting an orchard here, some few years ago, it was found necessary to dig the holes out 3 feet deep and 8 feet wide, and place a 2½ inch drain pipe to run into the main drain in the middle of the rows that were to be planted, afterwards filling to within 12 inches deep of rubble, clinkers, &c., before using turf. The surface soil was kept 12 inches above the level, and this allowed a few inches for settling. Afterwards, when having to lift the trees, I found this mound of earth a great advantage, as the roots were better to lift and prune, but the proceeding was a very expensive one. Unfortunately several of the varieties proved even then to be useless on this soil. For exposed positions trees with 3 feet stems are amply tall enough. When planting in such soils a free use of lime should be made, and those varieties planted that will to some extent resist the canker. Among the few that will do this are Cox's Orange Pippin, American Mother, Lemon Pippin, Irish Peach, Beauty of Bath, Lady Sudeley, Worcester Pearmain, and Rosemary Russet. The first to be attacked among these is Cox's Orange Pippin. Among culinary varieties Lord Grosvenor, Lord Derby, and The Queen are good ones. The Queen never fails to crop, the trees are clean, they grow into a good shape, and yield good fruits. Bismarck, Bramley's Seedling, Warner's King, The Sandringham, Kentish Fillbasket, and Newton Wonder succeed well on the espalier, as also does Bramley's Seedling.

Peasgood's Nonsuch, Stirling Castle, Baumann's Red Reinette, and Yorkshire Beauty have all succeeded here. Yorkshire Beauty as a standard never fails to crop well, and the fruits will keep in good condition for a long period. Any trees that are infected with canker should, after replanting, be kept quite 6 or 8 inches above the level of the ground. If the stem of a standard tree is diseased burn it, as it would never be of further use. When replanting, work in plenty of wood ashes, road scrapings, lime rubble, and a little slacked lime amongst the roots, as these materials will keep the roots warm during the winter. Before the leaves fall in the autumn syringe them with Bentley's Alkali, and again in the spring before the buds expand. When using this preparation before the leaves fall it should be applied at half-strength only. A free use of fresh lime is one of the best preventives, and if applied as a top-dressing in autumn and spring, the rains will wash it in. I have also used for dressing the ground the following mixture: 35 lbs. super-phosphate of lime, 21 lbs. nitrate-potash, 28 lbs. nitrate-soda, and 28 lbs. sulphate-lime. These were all mixed together and applied at the rate of a quarter of a pound to the square yard, but a little more may be given if desired. The trees are now gradually growing out of the canker, but it cannot be too often repeated that for heavy soils it is necessary to make an extremely careful selection of varieties, and, if possible, they should be obtained from a stock that has been growing on similar soil. Pruning should be done in the summer, for winter pruning aggravates the disease, and, if possible, let the trees have a clear run of growth. Any branches that may be overcrowding the centre of the tree may be removed in October before the leaves fall, and the wounds afterwards dressed with whale oil or Stockholm tar. *A. B. Wadds, Paddockhurst, North Sussex.*

NEW AND NOTEWORTHY PLANTS.

TRITONIA BRACTEATA (SP. NOV.)

The "hatchet-bearing" section of this genus includes four species (securigera, Nelsoni, flava, and bracteata), and forms an interesting group, structurally distinct from the rest of the Tritonias. This structural difference consists in three horny and probably gland-bearing processes, shaped like the head of a hatchet, which issue from the three lower segments of the corolla at the orifice of the tubular portion of the flower. No one has given any conclusive explanation of the functions subserved by these processes. Some have suggested that the narrowing of the "throat" of the flower would insure insect fertilisation; others that the processes were three effete stamens and that the ancestral forms had been true hexandrian plants. At any rate the structure of the flower in this section is sufficiently distinct to support the contention of a new genus.

T. bracteata was sent to me two years ago by Mr. Layton, from the mountains above Greytown, S. Africa, and flowered for the first time in my bulb-flue this September. It is an inconspicuous little plant, with spathes almost as large as its leaves. It is near T. securigera (Redouté, 53, *Bot. Mag.* 383) in the colour of the flowers, but differs therefrom in the flowers being only half the size, whereas the leaves are twice as large. The spathe-valves are also longer and acuminate, the scape is more flexuose, branching and floriferous, and the horny processes more developed. The hooded upper segment connects with T. Nelsoni; which latter sp. has narrow, linear leaves.

Description.

Scape, a foot high, flexuose, very hard, much branched, bearing thirty to forty scentless flowers, of a tawny-red colour, opening, singly or in pairs, and fading before others expand. Bracts very large and foliose, the lower ones 4 inches long. Flowers irregular, 1 inch span, the three inner segments narrower (over ⅛ inch wide) and recurved, the three outer wider (¼ inch) and not recurved. The upper segment is slightly wider still, and is incurved to form a hood protecting the stigma and anthers. The three lower segments marked with a yellow basal mark.

Filaments, all erect and contiguous. Style shorter than stamens. The inflorescence is irregular (all the flowers facing in the one direction) and appears in autumn on the new autumnal growth (in England, but probably spring-flowering in South Africa); this leaf-growth consists, at first, of three leaves of irregular shape each under 1 foot in length, by ½ inch in maximum width. The narrower leaf-growths, appearing with the flowering stem, are mostly, if not entirely, bracts.

Several of the Maricas are noticeable for similar foliose bracts. *A. Worsley, Isleworth*, 1905.

ORCHID NOTES AND GLEANINGS.

SCUTICARIA STEELII.

A photograph of a very fine specimen of this beautiful and rare South American Orchid is sent by Mr. J. Simon, gr. to W. W. Mann, Esq., Ravenswood, Bexley, Kent. The plant is growing on a raft, its slender, whip-like, terete leaves, 3 feet in length, falling perpendicularly. Clustered at the base of the leaves are 18 flowers, each about 4 inches across. All the segments are broad; the sepals and petals of a yellow colour, handsomely marked with chocolate purple; the lip is cream-white marked with purple. It is a very effective species and is not difficult to grow if placed on a block or raft and suspended in an orchid house having an atmosphere of an intermediate temperature.

SERAPHYTA MULTIFLORA.

A striking instance of the beauty to which a "botanical" orchid, which is an insignificant subject as a small or ill cultivated specimen, may attain when mature and well-grown is afforded in a fine inflorescence of Seraphyta multiflora sent by Mr. H. Haddon, gr. to J. Neale, Esq., Lynwood, Penarth. The inflorescence has seven branches, reaching about 18 inches from the extreme points, the branches being again divided, and the whole bearing about 200 flowers. The individual flowers are only about half an inch across, and of a pale greenish colour, but borne in such numbers at the tops of the reed-like growths that they make a very pretty display. The plant carries several spikes. Flowers of Liparis longipes and Camaridium ochroleucum were also received from Mr. H. Haddon.

CYPRIPEDIUM × SIDNEYANUM.

A new and pretty hybrid, said to have been raised between C. insigne, Harefield Hall variety, and C. × Leeanum Massereelsianum was recently in flower in the Orchid Nurseries of Mr. H. A. Tracy at Army and Park Road, Twickenham. The large, flat dorsal sepal is pure white with a small apple-green base. The lower half is finely spotted with purple, the spotting changing to dark rose colour towards the upper half. The petals are honey-yellow veined with purple, and bearing some blackish spots on the under side. The labellum is tinged with purplish red. It approaches the favourite C. × Leeanum but is a pleasing break from it, and also very different from other hybrids obtained from forms of C. insigne and C. Leeanum. *J. O'Brien.*

CROSS FERTILISATION OF APPLES.

The cross fertilisation of Apples forms an interesting study. In the ordinary course of events, it is a number of years before the seedling bears fruit, but a quicker way of attaining this object is by grafting a scion, taken from the seedling when strong enough—which it should be in about two years from the date of sowing the seed—then, under favourable conditions, the graft should bear fruit in about three years, or five years from the time the seed was sown. An interesting hybrid is Allington Pippin, the result of King of the Pippins × Cox's Orange Pippin (the latter being the seed parent).

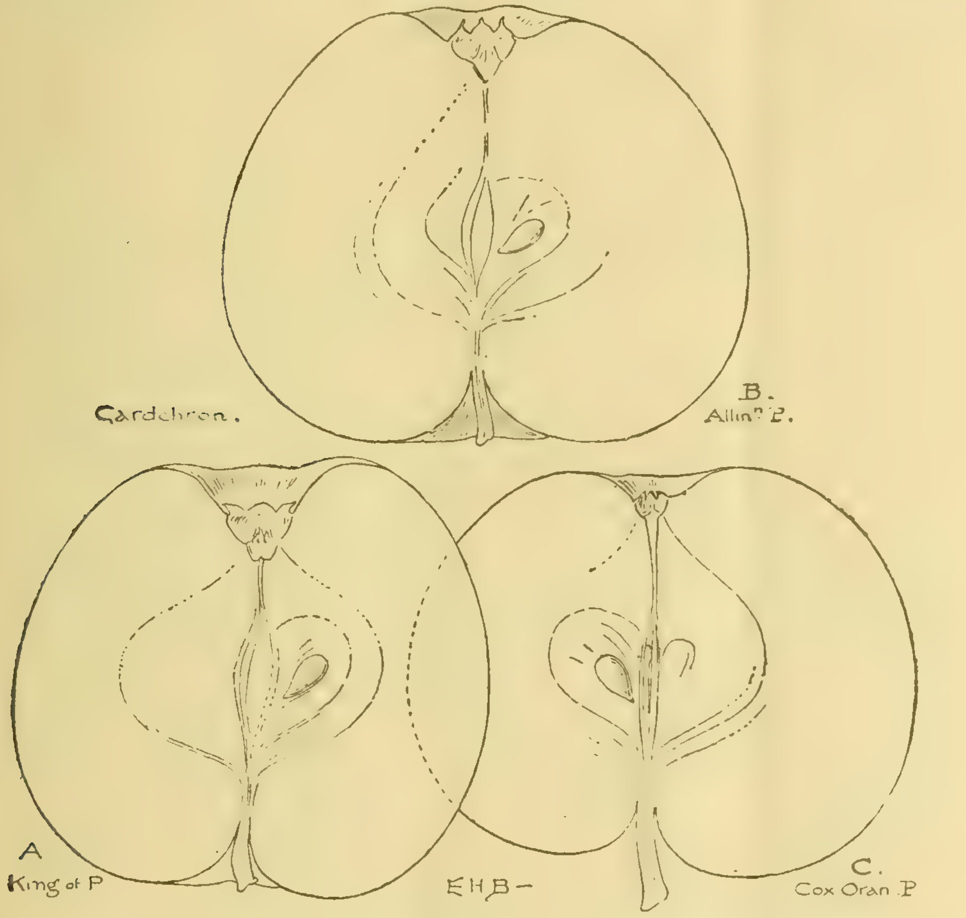

Fig. 1.—Sections of Apple Allington Pippin and its parents. (See text.)

The seedling approaches Cox's Orange Pippin in flavour, and in shape it is midway between the two parents, being more conical than Cox's Orange Pippin and not so "oblong" or "square-shouldered" as King of the Pippins. A curious point is that it succeeds in districts where neither of its parents will flourish. It will be seen on reference to the diagram (Fig. 1) (which was drawn from ripened fruits) that the calyx tube of King of the Pippins is broad and conical, while in Cox's Orange Pippin it is small and funnel-shaped, and in Allington Pippin it partakes of the form of both in being V-shaped, and is larger than that of Cox's Orange Pippin. Again, the sepals of King of the Pippins are reflexed, forming a broad, open eye, while those of Cox's Orange Pippin are inflexed, pointing towards the centre and closing up the eye, but in Allington Pippin they point upwards, forming a partly open eye. *E. H. Bowers, Glasnevin.*

NOTICES OF BOOKS.

The Forester: A Practical Treatise on British Forestry and Arboriculture for Land-owners, Land-agents and Foresters. By John Nisbet, D.Œc.

Fifty-eight years ago the first edition of *The Forester* appeared. It was a small (crown octavo) volume of 215 pages, and from this small beginning has been evolved the largest and most complete text-book on British forestry which has yet appeared. *The Forester* passed through six editions, and in the last of these, published in 1892, in two volumes, an endeavour was made by the Editor to "engraft the modern Continental science of Sylviculture upon the old British stock of Arboriculture." In this, however, Dr. Nisbet was not very successful, and now Dr. Brown's work has given place to another which, though based on the sixth edition of *The Forester*, is, to all intents and purposes, a new work, and one which, in the words of its author, is "intended to serve as a text-book dealing chiefly with British Forestry and Arboriculture (two really separate branches of Rural Economy, which have usually been treated as synonymous in Britain), and with the reasonable possibilities there are of improving the existing condition of our woodlands, and of planting waste land for the growth of timber on business principles, with a fair prospect of success." The work consists of six parts, dealing respectively with introductory matters, the British silva, sylviculture, the protection of woodlands, the management and valuation of woodlands, and the utilisation of woodland produce. The book is well illustrated and provided with an ample index.

As to the subject-matter of the book, it must be said that, as regards certain of its aspects, Dr. Nisbet has not approached the question with which he has so ably dealt in a very optimistic spirit. He is well aware of the difficulties with which economic forestry is beset, and he is thoroughly alive to the drawbacks to it which have to be overcome in this country as compared with what obtains in some Continental countries to which we have been rightly asked to turn our attention for guidance in economic sylviculture. On the question of afforestation of waste lands in Britain, for example, Dr. Nisbet does not hold out such tempting inducements as have been put forward (sometimes with rather more zeal than discretion, perhaps) by some writers on forestry. For example, in reference to the extent to which waste lands in Britain may be planted, Dr. Nisbet says (Vol. I., p. 94):—"Our waste lands undoubtedly offer a wide field for planting; but it is impossible to say in any general way (as has been stated) that 'land yielding a smaller net rental than 8s. an acre' for agriculture or pasture will now pay better under timber. The reason why any such statement must be misleading is that favourable local opportunity for disposing of wood at a profit is a main factor entirely overlooked, or, at any rate, presumed, in the actuarial calculations—and, unfortunately the favourable local market is often wanting"; and in estimating the proportion of the 16,710,788 acres classed as waste land in Britain which may be planted "with a reasonable chance of direct monetary profit," Dr. Nisbet gives it as his opinion that at present this is limited to about 3,340,000 acres, about one-fifth of the whole, and "about one and one-tenth times the existing area now classed as 'woods and plantations.'" This may seem a pessimistic view to take of the afforestation of our waste lands, as compared with the very fine prospects which have been held out in this direction by others; but when it is taken into account that, as Dr. Nisbet puts it, "if a great national scheme of planting were to be adopted with a view to supply part of our future requirements in timber, the cost of planting these 3,342,000 acres of waste land would probably . . . mean a total actual outlay of about £20,000,000 (disregarding compound interest)" the magnitude of the undertaking assumes more gigantic proportions than appear on the first blush; and over and above this there is the further drawback that, as Dr. Nisbet points out (p. 95), "a large proportion of the waste lands are above the 1,000 feet contour line, and in the open, wind-swept, unsheltered condition of the country very little of this higher land can possibly be planted at present with any fair chance of profit; while there is also a large percentage of peat-bogs where no timber crops will thrive until the bog is cut away so far as to allow the young trees to get their roots down into the mineral soil."

In the introductory part, which contains an extremely interesting historical sketch of forestry and arboriculture in Britain, there is much matter which will amply repay careful perusal; but it is in the third part, which treats of sylviculture, that the practical forester will probably find most food for reflection, and perhaps the most interesting chapters to him will be those dealing with the planting and tending of woodlands. In respect to "the best distance for planting," Dr. Nisbet has much to say, and we may here give a brief quotation or two to show to what conclusions he has been led regarding this important matter. "The probable profit," he says (Vol. I., p. 407), "of any plantation depends mainly on the local market for thinnings and for mature timber. One cannot plant simply the number of trees that will form the mature crop. Of the far larger number originally planted, only a small proportion of the fittest survive to the end, and the others have to be thinned out from time to time. If, therefore, the soil and situation do not of themselves necessitate close planting (as, say, at 3½ or 3¾ feet apart in squares or triangles on poor, exposed land), the market for thinnings may well be considered before one decides on planting at 4 by 4 feet, or at 4¼, 4½, 4¾, or even 5 feet apart. If there is a good local market for thinnings, close planting will be profitable; if not, then in place of being profitable it must cause a double loss, because while costing more, it will lead to the landowner being forced, sooner than otherwise necessary, to incur expense in thinning the young plantations without being able to dispose of the small poles with advantage"; and, again, he says (p. 408):—"Taking the three main factors of cost, probable profit, and soil productivity into consideration, it will be found that for ordinary planting with transplants from 1 to 3 feet high, 4 by 4 feet in squares (2,722 plants per acre), is, on the average, usually about the best distance for planting in Britain on medium classes of land for the given kind of tree." And in arriving at these conclusions, Dr. Nisbet is backed by Continental opinion, for it seems that "investigations at the Saxon Forest School (Tharandt) have shown that, on the whole, planting at 4⅓ by 4⅓ feet apart is the most profitable distance—and this even in a country where early thinnings are always saleable"; while Lovey (Germany) gives 4 by 4 feet as what may be called the "mean average," and Boppe and Tolyet (France) recommend "for all kinds of trees a distance of 5 feet between plants, in lines 6½ feet apart—or at least 5 feet in squares." It will thus be seen that the planting distances given by Brown were not so far amiss according to this, the latest, view; but where Brown did err, and err most egregiously, was in the after-treatment which he prescribed for the crops.

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* Wm. Blackwood & Sons, Edinburgh, 1905. Two vols. Price 42s. net.

The volumes are dedicated to the Royal Scottish Arboricultural Society "in commemoration of the fiftieth anniversary of its foundation," and the work will, no doubt, form a most reliable and up-to-date source of information on all that pertains to correct sylviculture. Principles must be linked to a practice adapted to the climatic and economic conditions of this country, and these are in many respects distinct from those of Continental countries from which in recent years we have learned much, but which it is possible to imitate too closely. *R.*

NOVELTIES OF 1905.

Orchids.—As usual, in recent years, the productions of the hybridist are strongly in evidence. In Odontoglossums some specially noteworthy novelties have been brought forward, such as the handsome O. × Smithii, of Messrs. Charlesworth & Co.; O. × Vuylstekeæ, of M. Chas. Vuylsteke; O. × Thompsonianum, of W. Thompson, Esq.; and the generic hybrid Odontonia × Lairesseæ, of M. Lairesse. Others standing well above the general run of novelties are the superb Cypripedium × Thalia Mrs. Francis Wellesley, from Francis Wellesley, Esq.; C. × Leeanum, J. Gurney Fowler; C. × The Baron, and Cattleya Schröderæ The Baron, of Messrs. Sander & Sons.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), the owner of the oldest and most varied collection, has the longest list of plants honoured at the Royal Horticultural Society, many of them "botanical" Orchids known to science but rare in gardens. The florally beautiful include the pretty white Schomburgkia chionodora, and its purple variety Kimballiana, Odontoglossum ramosissimum Burford variety, Cœlogyne Lawrenceana, Brasso-Cattleya × nivalis, and B.-C. Mrs. J. Leemann; Epi-Lælia × Sylvia, E.-L. × vitelbrosa, and Epidendrum × radico-vitellinum; and the botanically interesting, but still pretty, Bulbophyllum Reinwardtii, B. radiatum, Vanda Watsoni, Stanhopea connata, Cycnoches peruvianum, Grobya galeata, Dendrobium æmulum, D. ciliatum annamense, D. striatum, D. crumenatum, Epidendrum tricolor, E. pterocarpum, Seraphyta multiflora, and others.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), from his grand collection, has exhibited several fine groups of rare Orchids during the year. Among the exhibits selected for awards were Miltonia vexillaria The Dell variety, the largest known Miltonia; Odontoglossum liliflorum, a unique specimen; O. × Lucasianum Heatonense, the handsome O. × Wilckeanum Schröderianum, and O. × Adrianæ aureum.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), is well in the front rank of modern Orchidists. At the first show of the year he secured awards for the two fine Cypripediums, viz., C. × Memoria Jerninghamiæ, and C. × Westfieldiense; and at the last for that perfection of C. Fairrieanum crosses C. × Thalia Mrs. Francis Wellesley; the interval bringing to his credit among others, Cypripedium × Godefroyæ leucochilum citrinum, C. × Germain Opoix, C. × Thalia giganteum, Cattleya × Peetersii Mrs. Francis Wellesley, C. Schilleriana Westfield variety, C. × Maroni Westfield variety, Lælia × Iona nigrescens, and Lælio-Cattleya × Charlesworthii magnifica.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), great in Odontoglossums and Cypripediums, gained honours with the beautiful Odontoglossum × ardentissimum Doris, O. × a. Sibyl, O. crispum Smeeanum, O. c. Prince Leopold, O. × mirificum, Calanthe × Chapmani, Cypripedium × San-actæus, C. × San-acderæ, C. × Dom Carlos superbum, C. × villoso-Rothschildianum, Cattleya × Kienastiana, Oakwood variety Dendrobium × Venus, Cookson's variety; and Polystachya Haroldiana, a pretty white species sent by Mr. Harold Cookson from Lake Tanganyika.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), scores with a very varied and beautiful series, many of them raised at Westonbirt, and all finely grown. They include Lælio-Cattleya × Berthe Fournier, Westonbirt variety; L.-C. × Clive, Westonbirt variety; L.-C. × crispo-Hardyana, Cattleya × Iris magnifica, C. × Mrs. Pitt magnifica, Sophro-Lælia × læta Orpetiana, Lycaste Skinneri atro-sanguinea, Dendrobium fimbriatum, Westonbirt variety; Cypripedium × Chas. Rickman magnificum, and C. × Alcibiades, the last-named being shown in Major Holford's gold medal group on January 3, 1905, in which were many fine specimens which secured the Lindley medal for the grower.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound), who has one of the very best-grown collections, showed well during the year, his best being the charming Lælio-Cattleya × Epicasta, Gatton Park variety; and Miltonia Regnelli, Gatton Park variety; while among hybrids raised at Gatton the pretty orange-scarlet Epidendrum × Boundii is an almost perpetual flowering and useful plant.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), has secured awards for Cypripedium × G. F. Moore, C. × Actæus Chardwarense, C. × Actæus F. H. Cann, Dendrobium Phalænopsis, Chardwar variety, of a bright magenta-rose colour; D. p. Miss Louisa Deane, a pretty light variety; and the delicately tinted Lælio-Cattleya × Chardwarensis.

J. Bradshaw, Esq., Southgate (gr. Mr. G. G. Whitelegge), has for his best of the year the very remarkable Cymbidium rhodocheilum, for which he secured a first-class certificate on May 10; Cattleya Schröderæ Robin, and the giant Cattleya labiata Hercules.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), who secured the gold medal for a magnificent group at the last show of the year, secured awards for fine varieties of Cypripedium × aureum, C. × Lawrebel, and Oncidium crispum, all distinguished as The Shrubbery varieties, and very handsome and distinct.

Two superb novelties came from the rare collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), viz., the fine Odontoglossum × Wiganianum (Wilckeanum × Rolfeæ), and the large and perfectly-shaped pure white Lycaste Skinneri alba magnifica.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed the beautiful Odontoglossum × Hallio-crispum Theodora, the clear yellow O. Lindleyanum aureum, and Zygopetalum × Crawshayanum.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), exhibited the large and finely coloured Cypripedium × Daisy Barclay, and the elegant Cymbidium × Maggie Fowler.

Elijah Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), presented the rose-purple and white Zygopetalum × Ballii, and the rare Oncidium corynephorum.

Mrs. Haywood, Woodhatch, Reigate (gr. Mr. C. J. Salter), supplied Cypripedium × Haywoodianum, Dendrobium × Haywoodiæ, and Miltonia vexillaria radiata magnifica.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent Odontoglossum crispum Britain's Queen, and Cattleya × Pittiæ.

J. Leeman, Esq., Heaton, Mersey, furnished Odontoglossum crispum Louis L. Sander, one of the handsomest blotched forms; O. c. aureum, and O. c. Titus.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed Lælio-Cattleya × Harry Goodson, and Cypripedium Godefroyæ, Goodson's variety.

R. G. Thwaites, Esq., W. M. Appleton, Esq., Drewett O. Drewett, Esq., R. Briggs Bury, Esq., and others have contributed good things, the pretty Disa pulchra and its finer Tring Park variety, and Mormodes badium, being sent by the Right Honble. Lord Rothschild (gr. Mr. A. Dye); some curious and pretty botanical species by the Honble. Walter Rothschild, M.P.; and the white Brasso-Cattleya × Digbyano-Schröderæ var. Tankervilliæ, the pretty Cypripedium × Lord Ossulston, and the fine Vanda Sanderiana, Chillingham variety, from the Right Honble. the Earl of Tankerville (gr. Mr. Hunter).

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, has kept the botanical interest in Orchids frequently supplied from the rich store in the Dublin Gardens, in which he takes such pride. Dendrobium triflorum, and D. cymbidioides, sent by him, served to settle the confusion between the names of those species; and Aerides Ortgiesianum was an interesting plant.

(To be continued.)

CYPRIPEDIUM × THALIA, "MRS. FRANCIS WELLESLEY."

This grand hybrid, the result of a cross made between C. insigne and C. Baron Schröder, was exhibited by Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), at the meeting of the Royal Horticultural Society, held on December 19, when the Orchid Committee recommended it the award of a First-class Certificate. It is a flower of the highest perfection, being well balanced, of perfect shape, beautiful in outline, and pleasing in colour. The large posterior sepal is almost circular in shape, and quite flat, the colour being white, with a small shining green base, and rich and relatively evenly disposed purple markings that extend almost to the margin. The petals are honey-yellow in colour, but tinged and veined with purple brown, and with a few darker markings on the lower half nearer the centre of the flower. The tip is tinged with red-brown, and the staminode is yellow.

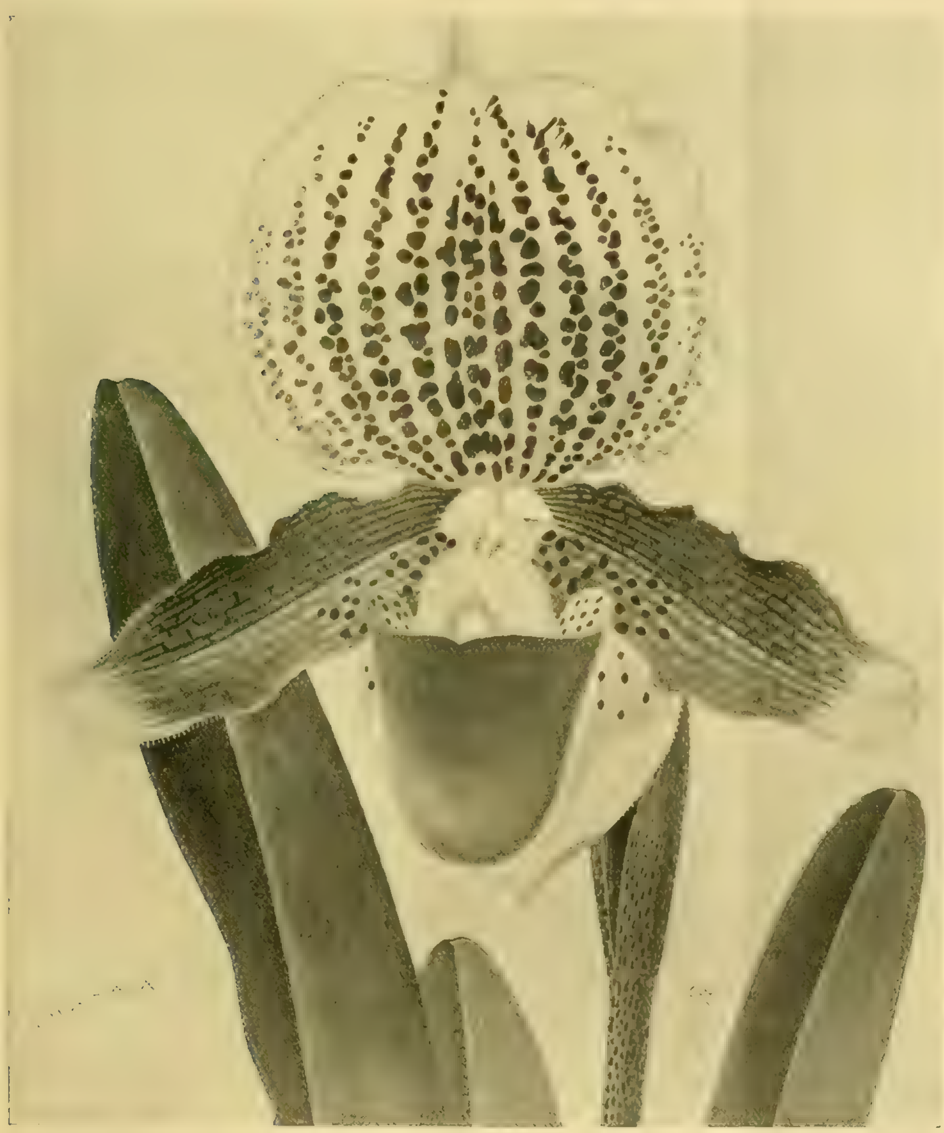


Fig. 2.—Cypripedium Mrs. Francis Wellesley.
(See text.)

CULTURAL MEMORANDA.

SALVIA SPLENDENS IN SMALL POTS.

It may not be generally known how useful plants of the above-named Salvia are at this time of the year for brightening the conservatory. The main batch of these plants, grown in large pots, will have now flowered, and these may, with advantage, be supplemented by growing a batch of summer-struck cuttings and flowering them in 6-inch pots.

Cuttings may be taken in July or early in August from plants that were rooted in the preceding spring. The cuttings should be inserted either singly in "thumbs" or around the edge of a larger pot, shifting them subsequently into 5-inch and finally into 6-inch pots. It is important that the plants be allowed the maximum amount of light, an ideal spot on which to place them being a shelf in a moderately warm, airy house. Allow the plants ordinary treatment in the matters of soil, feeding, etc., and take care to keep them free from red-spider. They will begin to produce flowers at the end of November, and will look bright considerably past Christmas. The variety grandiflora, bearing large, strong, flowering spikes, is suitable for this method of growing. *F. T. S.*

PLANT NOTES.

THE STREPTOCARPUS.

The Streptocarpus is a useful greenhouse plant, and is also very effective when used for the decoration of the dinner table, especially in conjunction with Dendrobium Phalænopsis.

The introduction of Streptocarpus Dunnii from the Transvaal to Kew in 1886 led to various crosses, which have been followed by most valuable results. S. Dunnii develops but one leaf, which is very large, being sometimes as much as 3 feet in length. The flowers are produced on crowded, erect panicles, which are developed from the base of the leaf. This species was crossed with S. Rexii, the latter having numerous small leaves, the result being the hybrid named S. Kewensis. It has also been crossed with S. parviflorus, a white-flowered species of similar habit to S. Rexii, and from this cross was produced S. Watsoni. These various hybrids were again intercrossed with each other and with various other species, the ultimate result being the production of a race showing distinct "breaks" and improvements.

The cultivation of Streptocarpi presents no difficulties, and once they become established they grow with great freedom. Although perennials, the best results are obtained when they are treated as annuals or as bi-ennials, for which purpose a fresh stock should be raised annually from seeds sown during February.

Good plants will, by this means, be obtained by the following August, and these will flower continuously through the autumn and winter.

These plants succeed admirably when planted in beds or on rockeries under glass, and thrive in shaded positions where many plants would fail for want of light. Streptocarpi prefer a compost which consists of equal parts of loam and leaf soil, together with one-eighth part of sand. When the plants are a year old they should be allowed 5-inch pots, and these will be found quite large enough for their further requirements. They will commence to flower about the beginning of May, and will furnish a succession of bloom until late in the autumn. During the summer months, when the plants are in flower, soot-water may be given them with advantage. The plants should be partially dried off and allowed a rest of several weeks' duration during the winter.

Streptocarpi are liable to the attack of mealy-bug, which usually appears on the under side of the leaves. The usual methods for eradicating this pest should be employed. *J. Gardner, Aldenham House Gardens, Elstree.*

VEGETABLES.

NEW VARIETIES OF POTATOS.

There must exist among cultivators of Potatos many who are at a great loss in selecting from the novelties enumerated in lists, and shown at exhibitions, those that shall be grown in a particular garden. Varieties differ so much in appearance, flavour and texture, that nothing short of an authoritative list dealing with the behaviour of varieties in different soils and localities, and more especially their ability to resist disease, their form, texture, cropping and cooking capabilities, would be sufficient. I read recently in a trade list a number of testimonials supplied by market-growers, gardeners, nurserymen and others concerning the merits of a certain new variety whose name it is not necessary for me to give. The writers made mention of all its good points as to cropping, power of resisting disease, shape, weight of crop &c., but one only had a word to say about its cooking quality. Potatos being primarily grown for human consumption, of what significance are its various good points if the quality of a tuber when cooked be not good? This and its flavour should be the supreme tests. In this instance the writer describes it as being "good."

Varieties vary greatly according to soil, climate, and the sort of cultivation pursued, and there are so many of them found in trade-lists nowadays as to make an authoritative list a prime necessity. Until such a help to purchasers is forthcoming, buyers should make small tests in their own gardens and fields, and thus ascertain if the varieties selected come up to their expectations in the more essential points. We are much indebted to the raisers of new varieties, but we need to have the results of their labours summarised, and inferior varieties consigned to a "black list." *F. M.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Cypripediums which flower in winter.—Up to within the last few years, mid-winter has always been considered a dull season for the production of Orchid flowers, but, thanks to the skill and perseverance of many enthusiastic hybridists, we are now, at this particular season, able to enjoy an abundance of flowers suitable for almost any decorative requirements. These remarks are applicable chiefly to the cooler or intermediate growing Cypripediums such as were to be seen at the last show of the Royal Horticultural Society. It is impossible to enumerate all the species, or the multitude of hybrids, but among them the following stand out conspicuously:—C. insigne and its varieties Sanderæ, Harefield Hall and Aberdeen, C. Leeanum giganteum and C. L. Clinkaberryanum, C. Euryades, C. Beekmanni, C. Actæus Langleyense, C. Thalia, C. Alcibiades, C. aureum, C. Sallieri Hyeanum, &c. Considering how easy it is to cultivate this section of Cypripediums, and how invaluable the flowers are at the present time, lasting as they do in good condition for weeks together, even when separated from the plants, they should be grown in quantity, and by everyone who is an admirer of beautiful flowers. As regards the lasting qualities of C. insigne, a correspondent in the *Gardeners' Chronicle* in 1842, p. 253, stated:—"On the first of December I placed eight plants in the drawing-room; there they revelled in the greatest luxuriance for three successive months, and, when taken out in March, were as fresh and vigorous as the day they were put in." The best time for repotting, or dividing up large specimens to increase the stock of any particular variety, is at the end of the season of flowering, but unless the compost has become sour or decayed, or a larger pot is needed, annual repotting is not necessary. Strong healthy plants that have become pot-bound may be placed into pots two inches more in diameter than those they are growing in. The pots used should be thoroughly cleansed and well drained, and be secured by a layer of rough sphagnum-moss. A compost consisting of lumps of peat, good fibrous loam, and chopped sphagnum-moss in equal parts, mixed with moderate quantities of broken crocks and coarse silver sand, will grow to perfection any of the above varieties, and others of the same category. In repotting the plants, do not raise them above the rim of the pot, but keep the compost just below it, so as to make the process of watering more easy. Stand the plants in a moist, shady part of the intermediate house, and keep them moderately moist until each plant has become well rooted into the new soil, after which time water must be freely afforded them. It sometimes happens that for want of water, fresh compost or more root room many Cypripediums are seen in poor condition. C. Spicerianum, C. Charlesworthii, C. Arthurianum, and C. Fairrieanum may also be repotted now; the first-named species grows better when raised a little above the rim of the pot, and should be afforded more drainage material and less compost than is advisable for the others.

Temperatures.—The atmospheric temperatures of the various divisions at night during this month should be regulated as follow:—East India house 60° to 65°, Cattleya or intermediate house 55° to 60°, Mexican about 55°, and the cool or Odontoglossum house 45° to 50°. A few degrees lower during exceptionally cold nights is beneficial when the atmosphere is somewhat drier than usual, owing to the unusual amount of fire-heat that is necessary. In the daytime the higher numbers should be maintained by fire-heat, but it matters little how much the atmospheric temperature may rise by reason of sunshine, provided there is sufficient air and moisture to balance the extra heat. Almost all tropical Orchids can be grown more or less well in the various divisions mentioned, but where a large number of some particular class has to be grown it is wise to give them a structure to themselves. Thus in some gardens there will be found, besides those mentioned, separate houses for Phalænopsis, Dendrobiums, Cypripediums, Masdevallias, &c.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

In writing this Calendar for 1906, I intend not merely to indicate the weekly routine work necessary in the Flower Garden, but as far as possible to introduce notes on some of the most interesting and useful plants and shrubs suitable for Flower Garden decoration. At the same time I will offer suggestions in colour combinations and other simple arrangements in beds and flower borders whenever the occasion offers itself. Seasonable advice shall be given from time to time on the many different phases of flower gardening, whether it be the wild garden, the rock garden, the water, or wall garden—mentioning appropriate subjects for each without exactly confining myself to describing definite work relative to these for each week. Being employed in an establishment situated under favourable climatic conditions, I may at times be induced to descant on flowering shrubs and tender climbers that may not everywhere be suitable to outside culture. If so, I shall qualify such remarks, that no one may be led into error and meet with disappointment.

The Formal Garden.—Although at the present moment there is not much actual work in maintenance other than keeping them clean and tidy, the arrangements of the flower beds of the formal garden for next summer's display must necessarily be exercising the minds of every thoughtful gardener. In some instances the beds are now filled with bulbs and other spring flowering plants, so that nothing at present, if desired, could be done in the way of intended alterations; but where there is no spring gardening practised, the beds, if not already prepared for the summer bedding, could with advantage be dug and altered at the present time. For the successful management of the formal garden it is most essential that a record of each year's bedding arrangements be carefully kept to avoid making repetitions, except at long intervals—unless especially desired by those most interested in the garden. It is quite an easy matter, if forethought and consideration are exercised, to alter annually the arrangement of the plants, and sometimes even to alter the disposition and shape of the beds, where the designs are not those of old-established French or Dutch gardens. By this means novelty and freshness are imparted to each year's display, and monotony, which detracts so much from the bedding system, is avoided. If plans for the summer bedding have not yet been determined upon, no time should be lost before this is done, as stocks of Pelargoniums and other plants will soon have to be potted up, and before commencing this work it is convenient to know the exact numbers of the different varieties required for the several purposes, otherwise much labour will be wasted, and confusion the consequent result. Insufficient stock of any variety must be noted, and steps taken at once to remedy the deficiency by propagation. In propagating and preparing plants for bedding, always allow a margin of 10 per cent. for mishaps. In places where, owing to the caprice of the proprietor or other circumstances, the parterre is changed two or three times during a season, enormous surplus quantities of everything must be provided.

Shapes of Beds.—In making new beds and designs, or in altering the shape of old ones, it is advisable to make them as simple as possible. Intricate designs, be they dove-tailed, chain, ribbon, or star-like in formation, may look pretty enough on paper, but when "laid out" always appeal to one as being decidedly "gingerbread" in their conception. They entail more labour in their formation and maintenance than plain rectangular, oval, or oblong beds. Besides these considerations, simple designs lend themselves more easily to tasteful arrangement in planting, which, after all, is the chief consideration. No matter how pretty the actual shape of the design, it is a failure if its construction tends to interfere with effective planting. In planning the different arrangements for the summer bedding, much will depend upon the taste and ingenuity of the gardener, but simplicity of arrangement and the artistic harmonising of colours should certainly be important features. Next week I will cite a few examples which occur to me of some good simple summer bedding arrangements.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

General Arrangements.—With the advent of the New Year a general scheme of arrangements should be drawn up, embodying the work in the kitchen garden for the whole season, and including any alterations likely to be made during that time. A complete plan should also be made so that the work of arranging the various crops may be facilitated and that it will not be necessary at the last moment to plant the crops in a haphazard way.

Seed ordering.—This is a matter of considerable difficulty to a beginner, or to a man having charge of a garden for the first time, until he exactly knows the requirements of the place. In ordering seeds beware of glowing advertisements of new varieties, but select those that are well known for their cropping qualities and good flavour, and of these there are plenty to choose from. The novelties of first-class firms are for the most part reliable, and no harm may be done in trying a few of them. A mistake often made is in ordering a small quantity of many varieties in a general way, when a greater quantity of fewer and more reliable sorts sown in succession would give greater satisfaction.

Preparing the ground.—The present winter so far has been very suitable for getting on with the work of digging and trenching, there having been an absence of severe frost. Advantage of this condition should be made full use of as long as it lasts, and the greater surface area that is thus exposed to the influence of the weather the better it will be for the crops.

Cabbages.—This crop promises well, having grown uninterruptedly. Care must now be given to protect the stems from frost by drawing the soil around them, first of all deeply hoeing between the lines to loosen the soil. In the advent of severe frosts a few Spruce boughs put in here and there will give much shelter in exposed gardens.

Broccoli.—As fast as the heads become fit for use lift the plants and place them in a cold frame where they can be easily protected. A strict watch must be made daily for these heads turning in, for if they are exposed afterwards they may be soon ruined by rain, or by morning frosts.

Brussels Sprouts.—All decaying leaves should be cleared away from the stems, as these would affect the sprouts, and particularly the flavour of them when cooked. Avoid cutting the tops of the plants until all the Sprouts have been gathered.

Onions.—Where Onions of extra large size are required the present is the best time for sowing the seeds. They should be sown in boxes in a fairly rich soil which has been passed through a ½-inch sieve. Place the boxes in an atmospheric temperature of 55°, and if the seeds are in a fresh condition they will germinate in about 10 days. The best variety is Ailsa Craig, which, for practical purposes, is synonymous with Cranston's Excelsior, there being but little difference between them. Neither of the types is fixed, although some advance has been made in that direction.

Leeks.—These may be sown in the manner recommended for Onions, for Leeks require a long season of growth before giving the best results. The remarks as to Onions and Leeks, however, apply only if specimens are required for exhibition or other special purpose. The general crops need not be sown for two or three months yet.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

The Planting of Fruit Trees.—If this work has not been completed and the weather is wet, any trees that are on hand should be heeled in to await suitable weather for planting. But if some dry, friable soil can be mixed with the staple, planting may be proceeded with if desired, though at a disadvantage. When planting any kind of stone fruit, some lime rubble or mortar plaster should be mixed freely with the soil, or, failing this, some fresh lime may be used to advantage. More especially should this be done wnen only a little lime is already present in the soil. Young trees that are planted merely as supernumaries may have a slate or two put under them, so that the roots will be prevented from striking downwards; they will then suffer the less from check when they have to be moved to other positions. In preparing the ground for Peach and Nectarine trees it is sometimes necessary to drain the soil by artificial means, especially if the subsoil is of an unsuitable nature for promoting drainage. When such is the case, the soil under the positions where the trees are to be planted should be thrown out to a depth of 3 feet 6 inches, afterwards laying bricks in the bottom, placing them on edge. Another 4 or 5 inches deep of smaller drainage material, such as broken bricks, etc., should be placed over the bricks and be covered with some freshly cut turves, putting them grass-side downwards, which will keep the fine soil from getting down into the drainage. Over the turves may be placed the compost in which the trees are to be planted, which should consist mainly of some good fibrous loam that has been stacked for a considerable time. This should be well chopped to pieces and mixed with lime rubble and crushed bones or bone meal, at the rate of 50lb. to six barrowfuls of soil. If sufficient loam cannot be obtained, use one half of loam and the other half soil, in order that the trees may make as good a start as possible. In planting, cut off with a sharp knife all mutilated roots, and any extra thick roots may also be cut away, bearing in mind that it is the fibrous roots which are most valuable.

Orchard Trees.—In many orchards there is overcrowding of the trees, coupled with deficient drainage. Many old orchards could be improved at this season by thinning the trees and draining the soil. A commencement in thinning should be made by cutting away all the wood in a particular tree that is not exposed to the sunshine; next, by cutting away all dead branches; and finally by thinning out the head of the tree. When draining the land, plant young trees in every instance where there is an old, unproductive specimen. Select only good and reliable varieties for this purpose, and plant each variety in a colony together, so that when gathering the fruit, the work may be done quickly. A rough plan should be made giving the positions of each variety.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to F. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

The Cleansing of Plant Houses.—With the advent of the New Year, we as gardeners are reminded that the time has arrived when attention should be given to putting our plant-houses in order, and no time should be lost in doing this. The woodwork of the interior should be well washed with soft soap and hot water, and the glass will need washing inside and outside that it may be made capable of admitting all the light possible to the plants. Remove and wash the sparor gravel from the stages, as it will often be found that worms are secluded therein, and these would establish themselves in the newly potted plants. Every effort should be made that in these and other particulars the plant-houses are thoroughly cleansed before the work of potting the plants is commenced.

The Potting Shed.—Much may be done in getting materials in order to facilitate the work when the time arrives for potting. The sizing of crocks and charcoal, the chopping up of peat, and the drying of cow manure may be done at the present time, and the pot rack should be given attention, and be well stored with clean pots in their various sizes.

Insect Pests.—The present time affords an opportunity to thoroughly clean such plants as Ixias, Codiæums (Crotons), Gardenias, and other hard wooded stove or greenhouse plants which have not been syringed during the winter months. Red spider, thrips, or mealy bug, etc., may thus have established themselves. A very simple, safe and efficacious wash, and one which is constantly used here is prepared as follows:—One wineglass of paraffin and three ounces of soft soap to three gallons of soft water. The soap and paraffin should be blended together to the consistency of cream before applying the warm water. The liquid is applied through a coarse spray syringe. No time should be lost in attending to this matter, as insects increase to an alarming extent when the temperatures rise.

Gloxinias.—A batch of the most mature bulbs should be selected and placed in a moist atmosphere of the temperature of 65° to 70°. When they have started into growth shake them out of the old soil and re-pot them in a mixture of good fibrous loam—peat and leaf mould in equal parts—adding a little dried cow manure and sand. Place the plants well up to the light.

Plants for Early Forcing.—Azaleas, of the mollis section, Spiræas, Deutzias, Lilac, Rhododendron Mdme. Wagner, early Tulips, Narcissus, Freesias, Lily of Valley, etc., will now readily respond to forcing if a temperature of 60° to 65° be employed. The Rhododendron mentioned is an excellent variety for gentle forcing, and the flowers are of a lovely pink colour.

Ventilation.—Careful attention to the ventilation of all plant houses is very necessary, taking every opportunity to change the air in the houses when the condition of the external atmosphere will justify the use of the wall ventilators, at the same time admitting a little at the roof. By this method the air is moved through the whole part of the house. Maintain the atmospheric temperature of the stove at 65° to 70°; intermediate house, 60° to 65°; conservatory, 55° to 60°. These temperatures will not unduly excite the plants at the present time.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

The Renovation of Vine Borders.—It is a very common occurrence to see Vines in an unsatisfactory condition; they bear very little fruit, or what there is is of inferior quality through shanking or some other cause. Such a condition is in most cases due to deficient root-action. The roots have penetrated too far down in the border, and if this important matter has not already been given attention, no further delay should be permitted. If the conditions were allowed to continue season after season, the results would be increasingly unsatisfactory. Autumn is the best season for carrying out this work, while the foliage is still hanging on the Vines, especially if the Vines to be treated are such as fruit early. If the borders are inside and outside, the inside borders may be done at the present time, and those outside next season. Commence by getting all the best roots up near to the surface and relay them in the following compost, which should have been got ready beforehand:—Good fibrous loam, taken from an old pasture if possible, cut in turves 4 inches thick, adding charcoal, ½-inch bones, lime rubble, and some half decayed oak leaves, with about one pound of some approved Vine manure, and the same quantity of basic slag to each barrow load of soil. Work in the prepared compost well among the roots, and beat it down firmly as the work proceeds; the roots should be covered with 6 or 8 inches of soil when the work is completed. Apply a good mulch of strawy horse manure, and an application of tepid water to thoroughly moisten the border. Crop the Vines lightly for a season or two until better results are obtained, and do not subject them to hard forcing. If the borders have been properly made, and there is good drainage, the roots will soon begin to multiply in the new compost. Give daily attention to such matters as the ventilation and heating of the houses, and afford water to the roots as often as is necessary. The only soil obtainable here is of a strong, greasy loam, but it seems to suit Muscat of Alexandria Vines very well.

Cucumbers.—A few seeds should be sown singly in 3-inch pots for the raising of plants to succeed those now affording fruits. Sow the seeds in a compost of loam, leaf soil, and a little wood ashes, which should be warmed to the temperature of the atmosphere in the house. Place the seeds on their edges so as to keep them from rotting, and stand the pots in a bottom heat of 75°, but do not apply water until the seeds have germinated. Lockie's Perfection and the old Rollison's Telegraph are both reliable varieties.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Jan. 6	Annual Dinner, Société Française d'Horticulture de Londres, at Café Royal, Regent Street, London. 6.30 p.m. German Gardeners' Society meet.
TUESDAY,	Jan. 9	Royal Horticultural Society's Committees meet.
THURSDAY,	Jan. 11	Royal Horticultural Society's Examination of Public Park Gardeners.
SATURDAY,	Jan. 13	Dutch Gardeners' Society meets at Richmond.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—36·3°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, Jan.* 3 (6 P.M.): Max. 51°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Jan.* 4 (10 A.M.): Bar., 29·7; Temp., 50°; *Weather*—Slight rain.

PROVINCES.—*Wednesday, Jan.* 3 (6 P.M.): Max. 51° S.E. of England; Min. 41° E. Coast of Scotland.

SALES.

MONDAY AND FRIDAY NEXT—
Herbaceous and Border Plants, 1,500 Roses, Hardy Plants and Bulbs, Azaleas, Fruit Trees, Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
Hardy Border Plants and Bulbs, Liliums of sorts, Herbaceous Plants, Dutch Bulbs, &c., at 12. 3,000 Roses at 3 and 5. Palms and Plants, Azaleas, Rhododendrons, &c., at 5. By Protheroe & Morris, at 67 and 68, Cheapside, E.C.

WEDNESDAY NEXT—
At Stevens' Rooms, King Street, Covent Garden.—Roses, Lilies, Plants, &c.

1906.

IN our last issue we passed briefly in review the salient events of the past year. We are absolved from the necessity of posing as prophets for the year now beginning by the publication of the almanac presented to our subscribers with the present number. In it the reader will find announcements of as many of the appointments for the year as we have been able to obtain. We have taken pains to render the list as accurate as possible, but some of the dates are liable to alteration, and other appointments have as yet not been decided on. Omissions and rectifications of this kind will be supplied each month as may be required. So far the year does not promise to be quite so eventful as the last, but appearances are deceitful, and the coming season may after all prove as crowded as the past. As novel features we may mention the proposed conversazione of the Royal Horticultural Society on July 30 and the Plant-Breeding Conference on the following three days. Adverting, for a moment, to matters in which we have special personal concern, we have to tender our most cordial thanks to our contributors and to our readers, and especially are our thanks due to the writers of our weekly Calendar. Our object is to secure that the directions for practical cultivation shall be given by actual practitioners of the highest repute. Last week we gave a series of portraits of those who had so kindly assisted us during the past year. It is from no sense of the inefficiency of our Calendar-writers—quite the contrary—that we make yearly changes, but simply that we may get fresh ideas from different parts of the country and afford others a chance of narrating their experiences. We introduce a new band of Calendar-writers this week in the confidence that they will do the fullest possible justice to their subject, and rival, if they cannot excel, their predecessors.

The mention of the alterations in our own department reminds us of the change at Kew, to which we had occasion to allude in a recent issue. We are enabled this week to present our readers with an illustration (see page 9) showing the staff of the Royal Botanic Garden, Kew, to one and all of whom we and our readers have been, from time to time, so greatly indebted. The photograph (by Mr. Stuart, of Richmond), which we are privileged to be able to reproduce, contains the portraits of Lt.-Col. D. Prain, the present Director, lately head of the Botanical Survey of India, and Superintendent of the Royal Botanic Gardens, Calcutta. Of his qualifications and the well-grounded hopes they engender, we have already spoken. In a similar way we have alluded to the most valuable services rendered to the establishment by Sir William Thiselton-Dyer, who though no longer director, remains for a short period as advisory officer. Mr. W. Botting Hemsley, the keeper of the Herbarium or Library, is one of our oldest and most valued contributors, and a botanist of world-wide reputation. Among his staff are Dr. Otto Stapf, to whom we were indebted for a valuable article on the Pampas Grasses and other plants; Mr. George Massee, the leading vegetable pathologist of the country, to whom our readers have been under constant obligations; Mr. N. E. Brown, whose precision and accuracy of detail are admired by all botanists; Mr. R. A. Rolfe, who has filled the place among Orchidists that Reichenbach once occupied; Mr. Duthie, formerly of Saharunpore, a frequent contributor; besides Mr. C. H. Wright, Mr. S. A. Skan, Mr. T. A. Sprague, and Mr. A. D. Cotton. To one and all of these, as we have said, the readers of this journal are under great obligations, and to them we are personally grateful for long continued courtesy and assistance. The physiological laboratory is under the superintendence of Dr. Dukinfield Scott, the value of whose researches is only equalled by his genial courtesy. Mr. Leonard Boodle acts as his assistant, and is well known in the botanical world. The museums, so long under the management of Mr. J. R. Jackson, are now confided to the care of Mr. J. M. Hillier and his assistant, Mr. Holland.

We come now to the garden staff proper, to whom our obligations are no whit less. Mr. W. Watson is universally known as the successor to Mr. Nicholson, and the assistant curator, Mr. W. J. Bean, has won the suffrages of the gardening community. Mr. Irving, the foreman of the herbaceous department, is highly esteemed by the large and always increasing number of lovers of hardy plants. Mr. Arthur Osborn has charge of the ever attractive "No. 4," and of the flower garden. Mr. Dallimore reigns in the arboretum; Mr. Hackett sees that things are as they should be in the stove-houses, including the Palm stove; Mr. Raffill has charge of the great Temperate house. In addition to these good men and true are others less well known perhaps to the outside public, but equally deserving of our consideration in their several departments. Among these are Messrs. Stocks and Aikman, W. N. Winn, Arthur Garnett, George Dear, and the Sergeant-Constable, Charles G. Norris. All these are depicted in our illustration, and have, in their several ways, amply won the confidence and esteem and the gratitude of the gardening community.

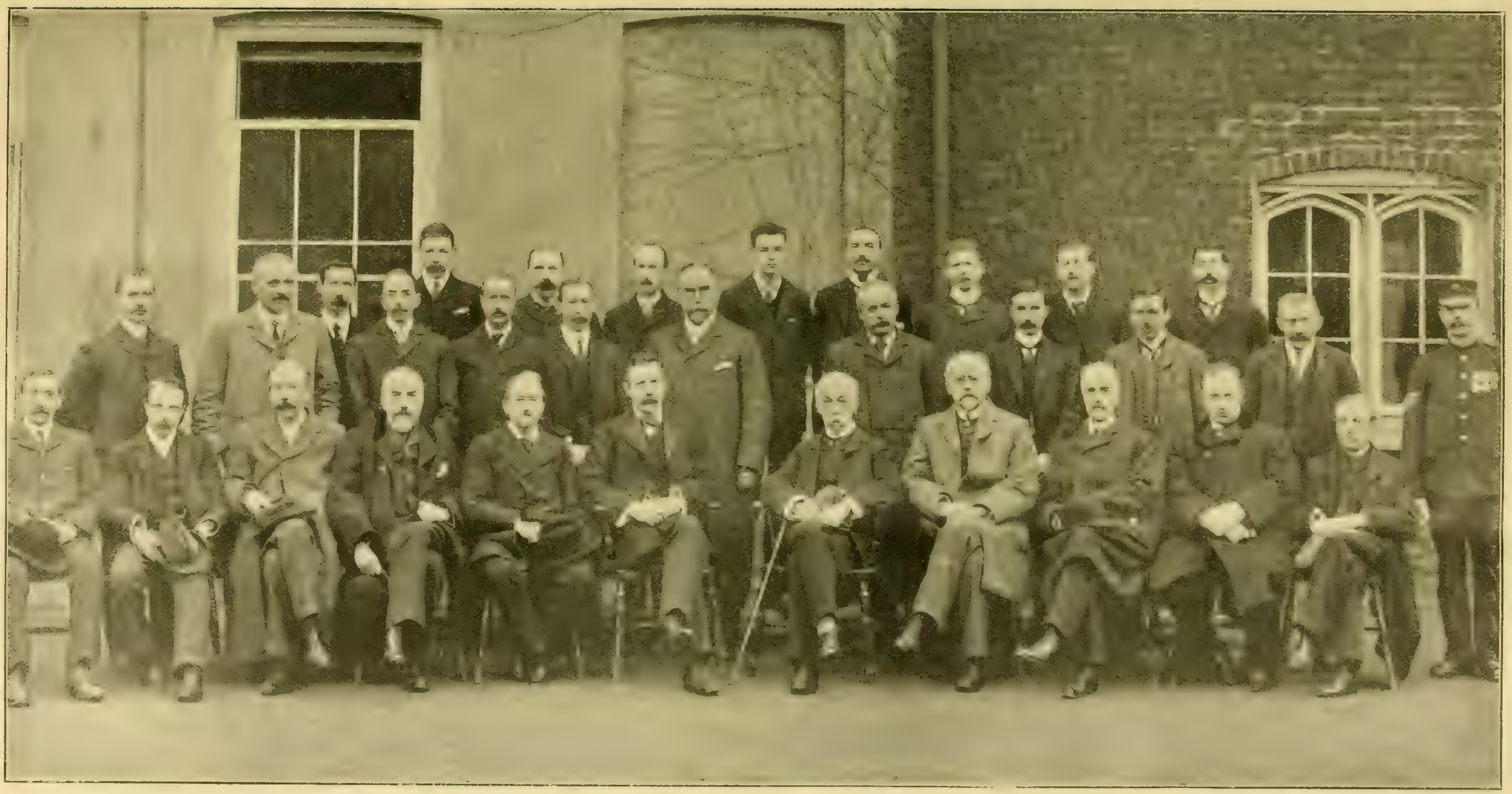
Our older readers will remember that the connection between the staff of the Royal Gardens and this journal, though entirely unofficial, has always been intimate, and the re-organisation of the garden in 1841 (the year in which the *Chronicle* was established), and the appointment as director of Sir William, then Dr., Hooker, were very largely due to the direct influence of the first editor of the *Chronicle*—the ever memorable Dr. Lindley.

ROYAL HORTICULTURAL SOCIETY.—The first meeting of the Royal Horticultural Society in 1906 will be held on Tuesday, January 9, in the Society's Hall, Vincent Square, Westminster. To prevent misunderstanding it may be mentioned that the committees of 1905 do not vacate office until the date of the annual meeting 1906, and in like manner all Fellows Tickets of 1905 are available until February 13, 1906.

REHMANNIA ANGULATA.—One of Mr. WILSON'S introductions from China to the nurseries of Messrs. JAMES VEITCH & SONS is the subject of a coloured illustration in the number of the *Revue Horticole* for December 16, M. GRIGNAN recommends the plant as furnishing "cut-flowers" for decorative purposes. The plants require to be raised under glass and planted out at the end of May. It will be prudent to give it the shelter of a cot and frame in winter. The plant was figured in a supplement to our issue for May 9, 1903.

FLOWERS IN SEASON.—What between the gardener and the hybridiser we have got to the point when we can include Rhododendrons among flowers at any season. Together with some good trusses of Rhododendron × Nobleanum came, just after Christmas, the following letter from Mr. R. BROOMAN WHITE, of Arddarroch (S.W. Scotland):—"I have a tree here about 4 feet in diameter and about 5 feet 6 inches high. It is one mass of bloom, and was open on Christmas Day, making a beautiful sight for this time of the year. There are four Rhododendrons in bloom just now, but none so full of open bloom as the one from which these trusses are cut. Should the weather continue mild they will in another fortnight be also one mass of bloom—very acceptable at this season of the year."

—Mr. T. SMITH, Daisy Hill Nursery, Newry, sends us flowering sprays of two interesting species of Rhododendron, R. dahuricum and R. parvifolium. Both are perfectly hardy, and they possess small rose-coloured flowers, those of the latter species being somewhat brighter than those of the former. R. dahuricum is a deciduous



Photograph by W. S. Stuart. Richmond.

THE PERMANENT STAFF, ROYAL GARDENS, KEW

Front Row (reading from left to right). George Dear, S. A. Skan, George Massee, Dr D. H. Scott, W. Botting Hemsley, Lt.-Col. D. Prain (Director), Sir W. T. Thiselton-Dyer, Dr. Otto Stapf, J. F. Duthie, L. C. Burrell, M.D., N. E. Brown.

Centre Row. W. N. Winn, W. J. Bean, R. A. Rolfe, C. H. Wright, J. M. Hillier, J. Allen, W. Watson (Curator), T. A. Sprague, W. Dallimore, W. Irving.

Back Row. J. H. Holland, A. Osborn, John Aikman, L. Boodle, A. Garnett, J. Stocks, A. D. Cotton, C. P. Raffill, W. Hackett.

Sergeant-Constable Norris.

species, while R. parvifolium is evergreen, the small leathery, oblong leaves being responsible for the specific name. Although the period of flowering in both cases is very early springtime, it has been somewhat advanced in the case of Mr. SMITH'S plants, who describes them in his communication as winter-flowering species.

HORTICULTURAL CLUB.—After the next House dinner of the Club on January 9, Mr C. JORDAN, Superintendent of Hyde Park, will speak about "British and Foreign Parks—a Comparison."

THE LATE MR. BURBIDGE.—It was our sad duty last week to announce the death of Mr. F. W. BURBIDGE, and to offer a portrait of the deceased gentleman, but circumstances then prevented us from referring in detail to the excellent work he has done for horticulture. Mr. BURBIDGE commenced his horticultural career as a student in the Royal Horticultural Society's gardens at Chiswick, which he entered in 1868. On leaving Chiswick, Mr. BURBIDGE removed to the Royal Gardens, Kew. From 1873 to 1877 he was one of the most active of the staff of *The Garden* newspaper, started by Mr. W. ROBINSON. During this period, he wrote several works on gardening subjects, including "Cool Orchids" (1875), "Domestic Floriculture," one of the best of its kind in the English language; "A Monograph of the Genus Narcissus," and "Cultivated Plants" (1877), an excellent text-book for young gardeners. In 1877-1878 he went on an exploring mission to North Borneo on behalf of Messrs. JAS. VEITCH, and during the trip he visited the little-known Sulu Archipelago. This mission resulted in the introduction of several plants new to British gardens, including Cypripedium Lawrenceanum, one of the finest of the genus. Mention may also be made of Burbidgea nitida, a Scitamineous plant previously unknown to science, and upon which Sir J. D. HOOKER founded the genus "in recognition of his eminent services to horticulture" (*Botanical Magazine*, t. 6,403). After his return, Mr. BURBIDGE published a narrative of his mission, entitled "Gardens of the Sun," a work of considerable literary merit, and which doubtless did much to secure for him the honorary degree of M.A., conferred on him by the Dublin University in 1888. In 1879 he was appointed Curator of the Botanical Garden at Trinity College, Dublin, to which was added the Keepership of the College Park in 1894. Mr. BURBIDGE was a Fellow of the Linnean Society, a member of the Royal Irish Academy, a member of the Scientific Committee of the Royal Horticultural Society, a Victorian Medallist of the latter society, a Veitch Memorial Medallist, and an honorary life member of the Scottish Horticultural and Botanical Society.

BRUSSELS BOTANIC GARDEN.—The exchange list of seeds, etc., just issued differs remarkably from most lists of the kind that we receive. In addition to the general catalogue, it contains an enumeration of the plants to be had from each of the botanical stations in Belgium, thus representing the floras of the salt marshes, the sand-hills, the polders, the heaths and bogs, the Beech woods, the limestone rocks of the Ardennes, and so forth. In the same way plants of "ethological" interest are offered. These plants are selected to show the influence of external conditions on structure and the means which plants possess of adapting themselves to various circumstances; thus examples are selected to show their adaptation to mechanical forces, resulting in differences of "habit," erect, prostrate, etc., or in differences of substance, turgidity, deposits of woody matter, folding or rolling of leaves, etc. Other plants are grouped according to the diversities in the processes of nutrition, to the organisation requisite for defence in the struggle for existence; variations in the methods of propagation and of sexual reproduction are also illustrated. In fact, so far as circumstances will allow, the whole life history and manners and customs of plants are illustrated, and seeds or plants useful as affording examples of these phenomena are offered for exchange. The perusal of the catalogue in itself is an intellectual exercise and should open the eyes of young and old gardeners to the significance and purport of the forms and variations they see around them in their everyday work. It is one thing to read of these matters in a text-book or to hear of them in a "popular" lecture; it is quite another thing to see the things themselves collected together so that "he who runs may read."

ECKFORD MEMORIAL CUP.—We are informed by Mr. HORACE J. WRIGHT that the firm of HENRY ECKFORD has placed at the disposal of the National Sweet Pea Society a silver cup, value 50 guineas, in memory of the founder of the firm. It will be offered for 12 bunches of Sweet Peas, distinct, to amateurs (members of the trade excluded), at the Show to be held on July 5th next, and the Society also will give a gold medal to the winner. The trophy must be won three times in succession before becoming the property of any exhibitor.

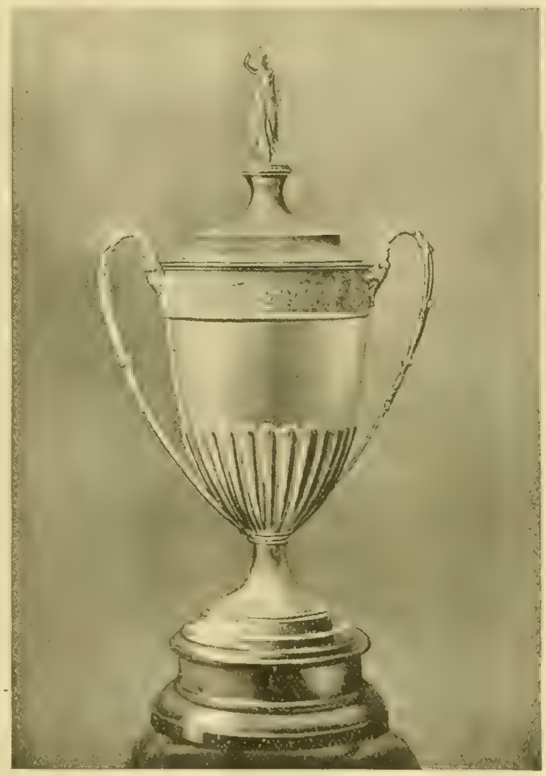


FIG. 10.—THE "ECKFORD" CHALLENGE CUP.
(See text.)

UNUSUAL COLORATION IN A NARCISSUS.—The small yellow form of Narcissus Tazetta, lately appearing in the street vendors' baskets, shows rather curious variations in the colour of the cup. When fully opened the flowers are ordinarily yellow, with an orange cup, but in some specimens there occur on the same truss with these normal flowers others of which the cups are pale green when first open, and that never exceed pale yellow in tone. It is difficult to account for a variation under circumstances apparently identical.

BRACTS OF THE LIME.—A pretty and curious effect was produced this autumn on some Lime-trees, the leaves of which had fallen while the reddish bracts still remained in their places. An un-botanical lover of nature looking up, and seeing the trees decked with objects that are not leaves, nor flowers, nor galls, may well feel puzzled. Even now the bracts remain attached to the trees, although diminished in number and rendered dull in colour.

ASPARAGUS SPRENGERI. — Mr. STEPHEN CASTLE has sent us specimens of a variety of this Asparagus, which has very narrow, silver-coloured margins to the narrow leaves, and in consequence is unusually attractive.

COLOUR-SENSE IN BEES. — M. GASTON BONNIER, in a paper read before the Paris Academy of Sciences, treated of the habits of bees in connection with the colours of flowers. According to the author, says *Nature*, the contradictory experiments of various observers on the relations between bees and colour are due to a lack of knowledge of the habits of bees There is a division of labour among the honey-fetching bees, the duty of those first issuing from the hive being to seek out honey and not to fetch it. After a certain hour all the bees are engaged in fetching and carrying, and none in hunting for fresh sources of honey, and hence, in selective experiments of this sort, quite different results may be obtained according to the hour of the day fixed for the experiment. The author's own experiments lead to the conclusion that the bees are not influenced by colour in their search for honey.

FORESTRY IN BELGIUM.—A recent number of *Nature* contains an account of the visit paid last August to the Belgian forests by the Royal English Arboricultural Society already alluded to in these columns. One of the most interesting excursions was that made to the geographical arboretum at Tervueren. "Here," says Mr. FISHER, "75 acres of good undulating loamy land, with a crop of small oak and other saplings, which serve as a shelter-wood, are being planted with exotic trees. The whole area is sub-divided into the Old and New Worlds, and each of these smaller sections, representing countries running from north to south. Thus the 'New World, is first sub-divided into the Pacific and Atlantic regions, and the former into Alaska, Rocky Mountains, Pacific Coast region, and Chile. The Atlantic region into Canada and the Alleghany Mountains. The Old World comprises Northern, Central, and Eastern Europe, Siberia, Caucasus, the Himalayas, Japan, and N. China. In each of these regions the characteristic trees, broad-leaved and Conifers, are planted in their natural mixture. It is also intended to plant among them the shrubs and herbaceous plants that naturally grow with the trees, and this has already been done in the case of Japanese species. Mr. BOMMER, the curator of the Botanical Museum at Brussels, is in charge of this arboretum. He has an extensive forest nursery, where he rears the necessary plants. This bold and scientific design is due to the initiative of the King of the Belgians, who has presented the State with the splendid domain of Tervueren, the management of which he still controls."

ARMSTRONG COLLEGE, NEWCASTLE-UPON-TYNE.—The work done in the four Northern Counties in connection with the Forestry branch of Armstrong College consisted of:—(*a*) Lecturing in the college, (*b*) lecturing at outside centres, (*c*) advising and reporting on the management of estate woods, (*d*) measuring and investigating sample plots of woodland Investigation of Woodlands.—The work consisted in selecting ideal samples of ordinary woodlands, measuring the timber upon them, and noting all particulars of soil, elevation, etc., as set out in a circular issued by the college. Mr. Forbes, the lecturer on Forestry, will, at the request of landowners or their agents within the above counties, visit existing woods or lands which it is proposed to plant, and advise generally on the subject, including suitability of soil, site, selection of trees, treatment of woods, sale of timber, nurseries, fencing, roads, etc., etc., on payment to the college of a fee at the rate of one guinea per day. Lectures to working foresters are arranged to be delivered at selected centres in the four Northern Counties, further particulars of which may be obtained at the college.

The Honest Package.—Under this title the *Fruit, Flower, and Vegetable Trades' Journal* figures a basket intended to supersede the ordinary "Southampton gallon." The proposed basket has a handle across the top, a metal label that cannot be easily detached, and is guaranteed to contain an average weight of 5lb. of strawberries. It is entitled, as we have said, the Honest Package, and it is "made in Belgium!"

Observation and Memory.—In the American journal *Horticulture* for December 9, 1905, is an illustration showing portraits of the heads of the firm and of several of the staff of Messrs. F. Sander & Sons. Some of them are well known to us and held in high esteem, but we confess to a feeling of envy at the qualifications of Michael Somers, the Azalea boy, who is said to "know 100 varieties by looking at the leaf only." Even a Thrips could not be more observant.

Horticultural Directory, 1906.—We have received from the office of the *Journal of Horticulture*, Mitre Court Chambers, Fleet Street, a copy of the *Horticultural Directory and Year Book* for the present year. No words of ours are needed to commend to the notice of our readers a publication which is in its forty-seventh year. It is in constant use in the Editor's work room. More we need not say.

Bud Rot in Cocoa-Nut Palms.—A mysterious disease is reported to occur in various tropical countries. The interior of the bud rots and is reduced to an offensive mass. As the consequences are very serious, investigations have been made, which tend to show that the mischief is due to the agency of bacteria. The *Agricultural News* (Barbados) recommends drastic measures and the destruction by fire of all affected trees.

Sugar-Cane Experiments.—Sir Daniel Morris reports that in Barbados advance is being steadily made in raising and growing new varieties of canes richer in sugar and more capable of resisting disease. A form known as B 208 is largely cultivated, not only in the West Indies, but in Natal and Queensland, where it is regarded as one of the richest canes under cultivation.

The Protection of Wood against White Ants.—All timbers, in tropical districts, with the exception of a few of the more expensive kinds, are subject to the depredations of white ants, whilst so far no treatment for the protection of wood against these pests has been commercially successful. Creosote and other mineral oils have been tried, but they are not lasting, only partially impregnate the wood, and cannot be used for indoor work. Various chemicals have also been employed, but in general these are inefficient or too costly. The method introduced, however, by the Powell Wood Process Syndicate, to which we alluded some time since, appears to overcome these objections. This process consists in first boiling the wood in a saccharine solution, which expels the air. In the subsequent cooling the solution is absorbed by the tissues, with the result that the wood is strengthened and improved in quality. It is afterwards artificially dried, and the ordinary process is then complete, the wood being thoroughly seasoned. In order to render wood proof against the attacks of white ants, it is only necessary to combine with the saccharine solution certain substances obnoxious to these insects, which substances are absorbed by the wood along with the saccharine solution. The extra expense is thus confined to the bare cost of the materials added, which is very small. Samples treated in this manner were sent out to India by the above Syndicate, whose offices are in Temple Bar House, E.C., and satisfactory reports regarding the same have recently been received. The application of this treatment will now permit of the more extended use of wood in tropical countries for all purposes, and may lead in many cases to the substitution of ordinary timber for more expensive hardwoods.

Radium.—Dr. Gager, as quoted in the *Garten Flora*, writes concerning the action of radium upon plants that the effect of the rays is to promote their growth in proportion to the intensity and strength of the radium. The degree of the influence depends upon the thickness of the coats of the seeds, on the distance of the radiating body, and upon the keeping of the seed covered with damp earth. The favourable influences have well-defined limits. Excessive irritation may be occasioned by the rays, and germination may be retarded or entirely prevented. The changes that take place in the cellular tissue are the same as are noticed under any other conditions where there is excess of illumination. Experiments with the material known as the "Radiotellur" afforded similar results, but the contrary occurred with the use of the light-producing element "polonium," which has no recognisable influence. If the air is filled with the "emanation" of radium the growth is retarded or comes entirely to a standstill.

Publications Received.—*Agricultural Bulletin of the Straits and Federated Malay States.* Edited by H. N. Ridley, September. Contents: Agricultural Exhibition in Penang; Water and its relations to Plant life, by Stanley Arden; Rubber in Sarawak; &c.—*The Agricultural Gazette of New South Wales*, November. Contents: Seeds and Seed-testing, C. F. Musson; Notes on Green Manures, F. B. Guthrie; Fumigation with hydrocyanic gas for ladybird larvæ and other parasites; the Wheat harvest; Forestry Notes for New South Wales, J. H. Maiden; &c.—*Official Catalogue of the Exposition d'Agriculture Coloniale au Jardin Colonial, Nogent-sur-Marne*, made interesting by the introduction of various illustrations.—*Bullettino della Societa Botanica Italiana*, October - November.—*Nuovo Giornale Botanico Italiano*, October.—This issue is dedicated to the memory of the late President of the Societa Botanico Italiano, Federico Delpino, and contains a portrait of him and an appreciative memoir.—*The Animal World*, January, 1906 (New Series).—Imperial Department of Agriculture for the West Indies: Pamphlet 38.—*Cultivation and Curing of Tobacco;* deals with one of the most promising of the Jamaica new industries, for which an important future is predicted.—*Annual Report, Botanical Department, Trinidad.* To March 31, 1905. By J. H. Hart, Superintendent. According to the report of Sir Daniel Morris, the Garden is in a satisfactory condition, and efficient work is being carried on there in assisting the development of the island. The Garden is, throughout, in a high state of cultivation.—*Report on Botanic Station, Grenada*, 1904-1905. The general condition of the Station is satisfactory. In future the Botanic Station will be carried on mainly on agricultural lines, and ornamental plants will not receive as much attention as formerly.—*Nova Scotia: Provincial Government Crop Report*, November, 1905. Returns from every part of the Province indicate a better season for the growth of crops than for several years, but not for Apples. It is noticeable that the returns are largest in all parts where the most modern methods of farming are carried on.—*The Botanical Magazine*, Tokyo, October 20, 1905. Contents: "Are the centrosomes in the antheridial Cells of Marchantia polymorpha imaginary?" and various articles in Japanese.

Seed Lists Received.—*List of Seeds collected during the year 1905 in the Garden at La Mortola, Ventimiglia, Italy.* All seeds are offered in exchange: no seeds are for sale. *Liste des Plantes Vivantes offertes en echange* par le Service des Terres froides et du plein air, Année 1905. Applications should be addressed to the Curator, Jardin Botanique de L'Etat, Bruxelles.

KEW NOTES.

Clerodendron capitatum, Schumacher.—This handsome species has been flowering in the Palm-house during the past three weeks, and has still a good show of bloom. It is a species that has not been in cultivation at Kew for many years, and possibly not elsewhere in this country, notwithstanding the fact that it was originally introduced in 1846 by Messrs. Lucombe, Pince & Co., of Exeter, from Sierra Leone. The Kew plant was obtained from seeds forwarded to the Royal Gardens by Mr. J. Mahon from British Central Africa in 1901, thus showing that the species is widely distributed. It has very stout, woody, vine-like stems, with numerous short lateral branches, on which the dense capitate inflorescences are borne. The leaves are obovate-oblong, acute at the apex, 6 to 8 inches long, 3 to 4 inches broad. They are somewhat membranous in texture, with soft hairs scattered over the upper surface. The inflorescence is composed of about 30 large flowers; they are white in colour, with a slender, hairy corolla-tube about 3½ inches in length. The stamens are very much exserted, giving the inflorescence a light, graceful appearance.

An excellent figure of C. capitatum is given in the *Botanical Magazine*, tab. 4355. It is closely allied to C. cephalanthum, *Botanical Magazine*, tab. 7823, which was introduced from Zanzibar by Sir J. Kirk in 1886, and is also growing in the palm-house. C. capitatum has the same remarkable character in the persistent petioles, which form a woody, recurved spine, as in the former species. C. cephalanthum has small leaves which are quite glabrous, and coriaceous in texture. The calyx is also light red in colour (green in C. capitatum); the corolla-tube is also quite glabrous, and the filaments of the stamens are of bright pink colour, which characters make the species perfectly distinct. *W. H.*

FORESTRY.

BRITISH AND BELGIAN FORESTRY.

If Mr. Forbes had felt able to credit me with ordinary intelligence and candour, he would not have suspected me of supporting my argument in favour of the British climate by citing exceptional instances of tree growth. Only one of the examples I gave can be reckoned exceptional, namely, the Pinus insignis [= radiata], which has attained a height of 61 feet in 21 years. I mentioned that tree because it happened to be before my eyes as I wrote. Even that tree is exceptional only because it has outstripped the Corsicans among which it is growing by 20 feet. It is growing in ordinary hazel-loam, about 12 or 14 inches deep, overlying an impenetrable bed of boulder clay, upon a slope facing the western sea, which is only three-quarters of a mile distant, so that its exposed top is open to every gale that sweeps across the Irish Channel. The other examples I cited—Oak, Ash, Larch, etc.—are all on the same exposed seaboard, the only exceptional circumstance in their favour being that I have abandoned the old fashion of planting in strips and clumps, and endeavour to secure the forest soil, indispensable to proper tree growth, by forming continuous masses. We shall do no good in forestry till we have done croaking about the British climate, in the possession of which most Continental foresters envy us. *Herbert Maxwell, Monreith, December 23.*

THE FALL OF ELM BRANCHES.

In the *Gardeners' Chronicle*, October 30, 1905, "R.I.L." seems to be in doubt as to the cause of the falling of Elm branches. During the 18 years that I lived in Dyrham Park I had abundant proof of the cause. I daresay "R.I.L." does not recollect the branches falling in the winter time, except in violent storms of wind. In Dyrham Great Park, as well as in the "Little Park," there was a great number of large Elm trees, and as these had had plenty of room in their younger days their lower horizontal branches extended a long way from the boles. It was no unusual occurrence for the heavy branches to snap off close to the bole, but this never happened in the winter time, nor in rough, wet weather, but only in dead calm, foggy weather, when the air seemed laden with moisture. In these circumstances the moisture seemed to condense and remain on the leaves until the branch could no longer bear the weight. I never could see any decay or flaw in the timber. All know that violent storms of wind will break off branches and uproot trees, but that is quite a different matter, and I think "R.I.L." will find that it was under the calm, moist conditions of the atmosphere that the damage was done. *D. Buchanan, Mackay, Queensland.*

LEGISLATION, AND THE SPREAD OF PLANT DISEASES CAUSED BY FUNGI.

(Concluded from Vol. xxxvi., page 458.)

Imported Fruit.

The importation of ripe fruit into a country is undeniably a source of danger. Many kinds of foreign fruit examined at Kew have furnished fungus spores which have germinated readily, and which, if they had found their way to the proper host-plant, would undoubtedly have established a disease. One redeeming feature in this case lies in the fact that the bulk of imported fruit is consumed in towns, consequently the spores are not so likely to reach those places where infection would result.

Two of the most injurious and most widely distributed diseases on ripe apples are "Brown rot" (*Monilia fructigena*), and "Apple scab" (*Fusicladium dendriticum*). It is very important to remember, however, that the spores from the ripe fruit are not the sole means of propagating these diseases. Although fruit growers only recognise these as fruit-diseases, as a matter of fact in both instances the disease first attacks the leaves, where its presence can only be detected by an expert. The spores formed on the leaves are washed by rain on to the young fruit, and in course of time the disease shows itself under the form of scab or brown rot.

It is obvious that in these instances scab and brown rot could be conveyed from one country to another quite as readily on living trees as on ripe fruit. Furthermore, trees conveying the disease need not necessarily bear leaves. If a tree has suffered from disease, spores of the fungus are washed by rain down the stem and branches, and remain in cracks in the bark until the following spring, when they germinate and, in many instances, gain access to the leaves, and infection results.

Is Legislation Desirable?

It is mostly in connection with the importation of living plants and fruit that legislation has been called in as a safeguard, but, as will be seen from the above account, as at present carried out, that is, examination at the port of entry, it merely touches the fringe of the subject, and in the proper sense is but a very poor makeshift for securing immunity against the entrance of fungus diseases into a country.

To render legislation more effectual in the case of imported living plants, all such should, immediately on arrival, be submerged for five minutes in a tank containing a fungicide, the nature of which would depend on whether the trees were in a resting condition, or bearing foliage. After this preliminary precaution the plants should be placed in quarantine for at least a year. That is, they should be planted in a certain place under the control of a specialist, whose duty would be to spray the plants *all over*, from time to time, more especially when in a resting condition, as at this period far more drastic measures can be applied with safety. By such means all superficial spores would be killed. On the other hand, if an active disease showed itself the plant should be promptly destroyed. It seems absolutely necessary that all these precautions should be taken before living plants imported into a country should be allowed to be sold and scattered broadcast through the country. If once distributed, the purchaser may not recognise a disease, or, if he does, would not in all probability promptly destroy the tree, but hope for the best, until the disease becomes established and beyond control.

As to whether such methods will be followed, remains to be seen. So far as the importation of ripe fruit, more especially Apples and Pears, into this country is concerned, there is nothing to fear; we are already well provided with all known diseases.

Finally, it is more than doubtful whether diseases are mainly introduced into a new country through the ordinary channels of trade. It is directly opposed to common experience, also to careful investigation, to conclude that diseased plants are sent out by nurserymen.

In these days of rapid transit numerous packages containing seeds which may have fungus spores adhering, or a few Potatos which may possibly contain mycelium of the fungus causing Potato blight, or leaf-curl in their substance, are being constantly sent to friends residing abroad, and by such means diseases are disseminated in a way well outside practical legislation.

In discussing the spread of disease from an infected area to another adjoining area, or, in other words, from one part of a country to another, the subject has to be viewed from a different standpoint to that followed up to the present. New factors of importance have to be considered, as the dispersion of spores by wind, animals, insects, and perhaps most of all through human agency. The constant interchange of seed grown in different districts, etc., favours the dispersion of disease. These all lie outside the sphere of legislation, and, unfortunately, it must be admitted, also often outside the sphere of preventive measures that can be applied by the practical man. It is in this connection that spraying is of real service in checking the spread of a disease, and if used as a preventive rather than as a cure, beneficial results will follow.

Negligent Cultivation.

The only remaining point requiring notice, perhaps the most fruitful of all in disseminating diseases to surrounding areas, is the occurrence of neglected gardens and orchards which in this country are far too abundant. Such places become in time centres of disease from which material for infection spreads in every direction. To suppress this possibility, the outcome of sheer neglect or thoughtlessness, drastic legislative measures are in force in some countries.

The above statements must not be interpreted as a tirade against legislation, but simply to indicate some of its weak points, as the law is at present administered, and at the same time to prevent disappointment on the part of those who are inclined to expect through legislation, however strictly enforced, any marked decrease in the number or intensity of plant-diseases caused by fungi.

Several definitely proved examples of modes of disseminating disease have been indicated which are obviously outside any possible legislative code that could be formulated. These, however, by no means exhaust the list of cases. The transportation of straw and forage is a wholesale means of diffusing diseases of cereals and grasses, as the spores of many of these fungi suffer no injury even in passing through the alimentary tract of an animal. Again, no law would insist on a man collecting and burning all diseased Potatos or Turnips met with in a field, even if in a condition to be collected. *George Massee.*

LEAVES FROM MY CHINESE NOTE-BOOK.

WA-SHAN TO FULIN.

(Continued from Vol. xxxvi., page 459.)

July 6th.—I left Yin-Kou at 5.45 a.m., having enjoyed a good night's sleep in spite of my filthy surroundings. We crossed a cultivated flat and passed the village of Yin-Shui-Ping. This hamlet bore strong evidence of a recent large fire. Carpenters were busy, and one new house, nearly completed, looked as if it would afford good accommodation later on. Soon after passing the above village we descended by a good road to a broad torrent. Following this road for a mile or so we eventually crossed the torrent by a rotten wooden bridge at an altitude of 6,100 feet. The cliffs of this torrent are of limestone and often a thousand feet sheer. In places they were clothed with vegetation; a species of Corylopsis being a common shrub here, and our old friend Rodgersia was still abundant.

Near the bridge was a house, and behind this house some trees of Sambucus racemosa nearly 30 feet high, and covered with panicles of red fruits. Leaving this bridge, we followed a path, on the right bank of the torrent, for a couple of miles, ascending and descending in a most exasperating manner. Eventually we left the torrent, skirted the mountain side and crossed over at 6,300 feet. Between the bridge and the pass Lilium concolor was not uncommon. I also collected a curious Primrose having a very tiny flower peeping out from an enormous calyx (P. pycnoloba). Crossing an undulating plateau we reached the village of Huang-mao-ch'ang, altitude 6,300 feet, at 10 a.m. and lunched there. It was at this village that Baber was regaled with a kind of tea having the natural flavour of milk, or, perhaps, more exactly that of butter. I did not have the same good fortune, and, therefore, can throw no light on the source of this curious tea.

The village of Huang-mao-ch'ang is a filthy place; its only street an open sewer. Its inhabitants are in harmony with the place. They crowded around me as I lunched, and their stench was almost too much for endurance, hungry though I was.

The road afterwards was fairly flat, though we had to make many sharp ascents and descents to cross the beds of torrents, most of them dry. This plateau, or series of plateaux, is highly cultivated: Wheat, Barley, Maize, Irish Potatos, Peas, Glycine hispida, Nicotiana rustica, Cannabis sativa, and two kinds of Buckwheat are the chief crops. One kind of Buckwheat grows 2½ feet high, and has greenish inconspicuous flowers. The other kind has bright pink flowers, and grows only a foot or a foot and a half in height; next to a field of Opium, I know no prettier sight than a field of this pink Buckwheat. Walnut trees are very abundant, all cultivated. The houses are nearly all surrounded by stone walls, on the top of which Rosa moschata makes an impenetrable hedge. It was then in full flower, and its myriad blossoms scented the air. Our coolies bought excellent peaches here at the rate of 500 a shilling! The cuckoo was singing gaily, and altogether the tramp across this "flat" was very pleasant.

After a time our road led under the lee of some high cliffs, and in the far distance on our left some very high mountains were prominent. So cold was the wind that I thought it must be blowing across some snow-clad peaks, but the people say it is not so.

Leaving the plateau, we ascended by a good road and crossed over at 7,200 feet. Descending rapidly by a steep path, we crossed a stream, and another steep ascent brought us to Tsai-erh-di, our resting place for the night. In the descent I noted several small bushes of the Davidia. All the trees have been felled, and the hill-sides are covered with a dense scrub. This wanton destruction of the forests is much to be deplored, and makes a botanist feel aggrieved.

Tsai-erh-di is a tiny hamlet of half-a-dozen huts, altitude 7,100 feet.

This day's journey was tame after the one previous; nevertheless, I gathered several fresh plants; the most remarkable being a new species of Buddleia (B. nivea) with stems and foliage covered with a dense white tomentum. The people en route, though filthily dirty, looked both healthy and happy: this applies particularly to the women and children. The comparative absence of goitre is very surprising; ophthalmia is, however, terribly prevalent. The day was fine, with much mist. It was very cold hereabouts, and the people were all clad in their padded clothing.

The following were the noteworthy plants met with en route to-day:—Tetrastigma sinensis, Boenninghausenia albiflora, Lysimachia clethroides, Epimedium sagittatum, Lindera glauca, Populus lasiocarpa, Epilobium augustifolium, Rosa sericea, Olea fragrans var., Jasminum sp., Picea sp., and Actinidia sp. I also gathered seven fresh ferns. Astilbe Davidii and Ilex Pernyi were not uncommon in places. *E. H. Wilson.*

(*To be continued.*)

TREES AND SHRUBS.

IDESIA POLYCARPA.

THIS interesting tree is this year bearing a more plentiful crop of fruit than I have seen before at Kew, and as the species is now spreading in cultivation, an illustration of a fruiting branch (see Fig. 11) may be of interest. It is not generally known, I believe, that the species is dioecious—that is, its male and female flowers are borne on separate trees. Representatives of both sexes must, therefore, be planted before fruit can be obtained.

It is a Japanese tree, said to grow 40 to 50 feet high, and was first brought into notice by Richard Oldham, the Kew collector, who gathered specimens of it in Japan in 1862-3. Maximowicz found the species again in 1866 and gave it the name it now bears. The tree must have been introduced to Europe then or soon after, for it was growing in the collection of the late M. Lavallée at Segrez in 1869. In general appearance the tree is like a Catalpa, but the leaves, whilst not so large, are thicker and firmer in their texture. It may rank as one of our fine-foliaged, hardy trees, for I have this year measured leaves 10 inches long and 7½ inches broad. The outline is heart-shaped, with an oblique base, and the margin is coarsely serrate. Both surfaces are quite glabrous. The branches grow out mainly in a horizontal direction from the trunk.

The species is figured in the *Botanical Magazine* (t. 6794), but although male and female flowers are differentiated, it is not stated that they are borne on different trees. This is the case, however, at Kew; of the two trees grown in the collection one only ever bears berries, and only pollen-bearing flowers appear on the other. It is not as a flowering tree, however, that the species has any merit, for the flowers, which have no corolla, are small and of dull yellow colour. The fruits, however, are rather ornamental, being of brownish red colour and hanging in abundant grape-like clusters. Each berry is only about the size of a large Pea.

The genus Idesia is at present monotypic, but Mr. E. H. Wilson has recently introduced for Messrs. Veitch from China a nearly allied and somewhat similar tree. This is the Poliothyrsis sinensis of Oliver. It differs from Idesia in having capsular instead of baccate fruit. Both belong to the natural order Bixaceæ. *W. J. Bean, Kew.*

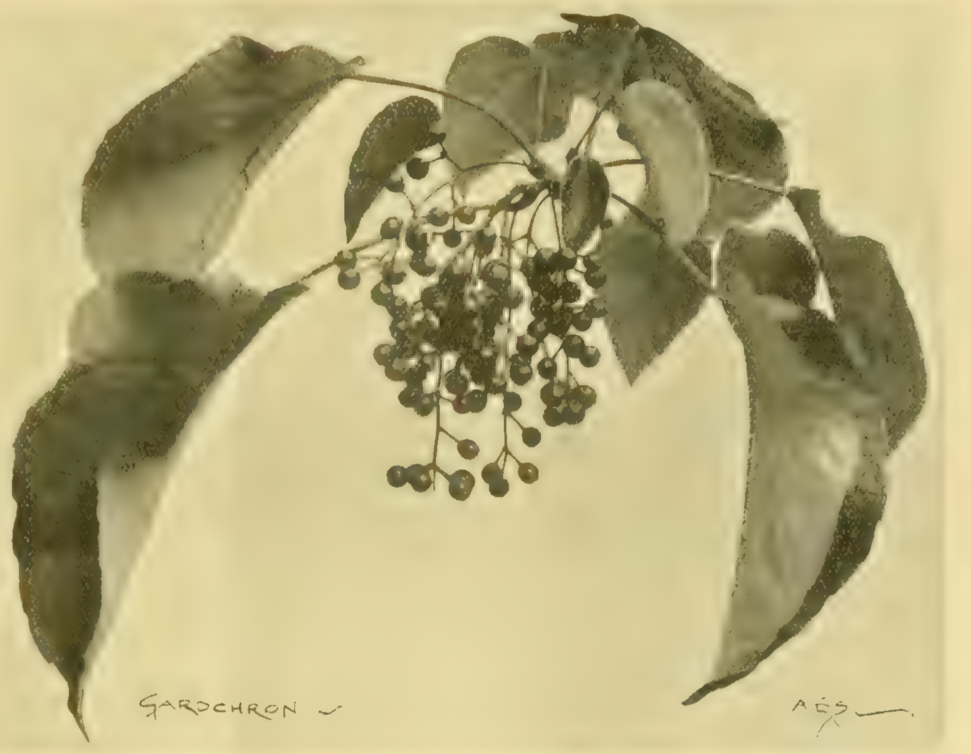


FIG. 11.—FRUITING SPRAY OF IDESIA POLYCARPA FROM ROYAL GARDENS, KEW.

HARDY FLOWERS.

FREE FLOWERING OF IRIS STYLOSA.

IRIS unguicularis, more generally known as I. stylosa, is apparently, according to the notes of various correspondents, unsatisfactory in the colder portions of the kingdom, where it is said to require a position at the base of a warm wall. In the south-west, however, it flowers profusely through the entire winter and in the open as freely as with wall protection. Two plants that have been under my notice for the past few years have done remarkably well. They are growing in pockets on each side and at the top of a flight of steps. The size of the pockets is 24 inches by 17 inches, and these are now completely filled. Last season they produced 631 blooms—viz., 47 in November, 222 in December, 206 in January, 135 in February, 18 in March, and three in April. The largest daily gathering was on December 31, when 54 blossoms were cut. This Iris increases with remarkable rapidity. About ten years ago I gave six small roots to a nursery firm, and the produce of these has completely filled a steeply sloping bed about 15 yards long and three yards across. Some hundred or so plants have been sold, and this year it has been found necessary to lift and replant in more spacious quarters. Curiously enough, after such a hot summer and dry autumn the plants are, this year, a full month late in blooming. They often commence to flower in the last week of October, and almost invariably early in November, but this season hardly any of the plants known to me bloomed before December. When growing, they cannot be said to be highly decorative, as the long, arching leaves somewhat hide the flowers, but for indoor decoration, the flowers when picked in the bud state, are unrivalled. There are many named varieties, of which one of the best is speciosa, with purple flowers. Others are the white (of which there are two forms) atroviolacea, pavonia, superba, purpurea, magnifica, marginata, lilacina, and Kaiserin Elizabeth. In a large collection many shades are to be seen in the flowers, but it is doubtful if any exceed the beauty of the lavender type. All varieties are deliciously fragrant, a fact which adds greatly to their value. *S. W. Fitzherbert, S. Devon.*

FRUIT REGISTER.

PEAR TRIOMPHE DE TOURNAI.

A PEAR ripening in January. The fruit is of moderate size, oblique, unsymmetrical, about 4 inches long by 3 inches in width, with a short stalk, skin yellow, flesh juicy sugary, "good or very good." A coloured figure is given in the *Revue Horticole* for November 1.

PEAR COMTE LELIEUR,

A VARIETY raised by M. Ernest Baltet, of Troyes. The tree is pyramidal, very hardy and prolific; the flowers are double, so that when in blossom the tree is very ornamental. The fruit is of medium size, regularly pyriform with a moderately long stalk. The skin is olive-yellow, speckled with small brownish spots, and sometimes flushed with crimson on the side exposed to the sun. Flesh melting, delicate, juicy, and of first-rate quality. Season, from the middle of September to the end of October, or even November. This Pear is described and figured in the November number of the *Bulletins d'Arboriculture*, etc., where it is highly spoken of both by M. Burvenich and M. Charles Baltet.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

"CARNATION."—In tracing the name "Carnation," as applied to the flower, Mr. Henslow has overlooked an earlier instance than those given by him, though it is quoted in the new English Dictionary. Turner, in 1548, says, "Vernacula lingua vocamus a Gelofer aut a Clowgelofer aut an Incarnacyon." *H. E., Bitton.*

THE NATIONAL POTATO SOCIETY'S EXHIBITION.—Having received a somewhat strong protest from a Potato exhibitor with regard to the announcement recently made that the Society's exhibition of 1906 will be held on December 13 next, certainly a very late date, and presumably following the Smithfield Cattle Show, I wish it to be known that I have been compelled to resign, from lack of time and ability to attend meetings of the Society, and preferring to give place to some one younger, and having more leisure. The mention of that fact will, I trust, prevent other protests being made to me. They should go to the secretary. In the interests of the Potato, I feel the deferring of the show to so late a date as the middle of December is injurious. The shows of the old International Committee were always held at the end of September, or early in October, but the committee controlling those shows gave first place invariably to the amateur or gardener competitor, and those who remember those exhibitions remember also that quite an army of such competitors had grown up under the auspices of the Society. I could wish that the National Potato Society would arrange for an early autumn show in the south, and a later one for the trade, and northern growers, in the Midlands or Edinburgh, in November or thereabouts. The Potato trade, in order to recoup itself for costly exhibitions, had to depend on the business done at shows, and to secure such business the best possible course is to encourage the creation of myriads of private Potato growers and competitors, as these become ultimately the backbone of business. As the decision to hold the next exhibition was presumably made at the annual meeting held in December at the Agricultural Hall, no doubt the members present thought the late date best. I hope I offend no one in differing from them for the reasons stated. *A. Dean.*

ROYAL BOTANIC GARDENS.—At the Royal Botanic Gardens, Regent's Park, there is a house containing an interesting collection of economic and medicinal plants. Of late years a great improvement has been effected in the arrangement and upkeep of the plants, and the result has been to make this range of houses more valuable to botanical students. It is a three-quarter span house and has a south aspect, and of the three divisions which it comprises the central is heated to suit plants from a tropical climate, the two outside ones having the more moderate temperature of our English climate. A system of labelling has recently been introduced by which the genus, the species, the home, the common name, the Natural Order of each plant may be rendered familiar to the visitor. The plants themselves offer various attractions, some have a Biblical, some a commercial, some a medicinal interest. Among the "Biblical" specimens we may mention here are St. John's bread (Ceratonia siliqua). St. John's bread, or, to give it its other name, the Locust bean. This is supposed to have sustained St. John the Baptist's bodily needs in his desert career, and it has the additional interest, apart from its Scriptural one, that the single seed in the pod represented (so we may believe) a weight in use by jewellers. The Sacred Fig tree (Ficus religiosa) is more interesting in the acuminate shape and the leathery texture of its leaves (unique features to be noticed) than from any Scriptural association. The commercial plants are more numerous; those to be noticed especially are:—Monstera deliciosa, Logwood (Hæmatoxylon campechianum), Loquat (Eriobotrya japonica), Mango (Mangifera indica), Mangosteen (Garcinia mangostana), New Zealand Flax (Phormium tenax), Sugar cane (Saccharum officinarum), Japanese pepper (Piper futokadsura), Nopal (Opuntia cochinellifera), Sarsaparilla (Smilax Sarsaparilla), Sandbox-tree (Hura crepitans), Sweet orange (Citrus aurantium), Ginger (Zingiber officinale), Chian turpentine (Pistacia terebinthus), and Olive tree (Olea europæa). The Monstera is an epiphytal climber, a gigantic Aroid, the leaves are cordate and perforated with large holes; the aerial stems develop long, somewhat woody roots which branch considerably on reaching moisture. The fruit when ripe is not unlike the Pineapple in taste. A fine healthy specimen is now in fruit. The Logwood is a native of parts of Central Africa and America. The wood yields a blood-coloured stain used extensively for dyeing and for staining microscopic sections. The Loquat is cultivated in Japan and China for its fruit; this has the flavour of an apple. The many specimens here fruit nearly every year. The leaves of Phormium tenax possess extremely tough fibres, which are most valuable in the manufacture of ropes and mats. The fibres are extensively used by the natives of New Zealand. The Nopal plant is interesting in that it forms the home of the cochineal insect. The commercial cochineal is the dried female. The Ginger of commerce is the fleshy rhizome of Zingiber officinale. The best kinds are imported into this country from Jamaica. Pistacia terebinthus yields a well-known gum resin, it is a native of North Africa. Lastly we come to the plants from which are derived some of our most valuable medicines. Under this category come the Blue gum (Eucalyptus Globulus), Quinine plant (Cinchona officinalis), Castor oil (Ricinus communis), Papaw tree (Carica papaya), Barbadoes aloes (Aloe vulgaris), Gamboge (Garcinia pictorum), Cassia bark (Cinnamomum cassia). Quinine is obtained from the bark of Cinchona officinalis. Castor oil is expressed from the seeds of Ricinus communis. Our supply is derived principally from India. The fruits of this plant, which can now be seen, are not unlike those of Datura in appearance, being covered with little spines. The purgative drug known as bitter aloes is squeezed from the thick leaves of Aloe vulgaris. An oil known as Gamboge butter is obtained from the fruit of Garcinia pictorum. *G. W. D.*

CALANTHE VEITCHII SPORT.—At a recent meeting of the members of the Egham and District Gardeners' Mutual Improvement Association, a plant of C. Veitchii was exhibited that in a very important particular had diverged from the normal habit of this plant. The specimen grew from just one pseudo bulb, that had, early in spring, been put into a 5-inch pot. This had made two growths, which had developed into pseudo bulbs of large size, each one carrying a flower spike of about 3 feet in length. The peculiarity of this, however, was that while one spike bore flowers of the usual rosy-pink colour, the other spike had flowers of a very pale-flesh colour. The contrast between the two spikes was great, and the novelty was much admired by the large company present. I can only imagine the pale form to be a sport from the normal type, not at all, I suppose, an unlikely matter, yet I confess that after considerable experience of this class of plants, I cannot call to mind any occasion when such a marked departure from the original was observable. Doubtless C. vestita rosea and C. limatodes have been fertilised in many establishments, and the result has been that considerable variation has resulted in depth of colour in the flowers of the seedlings raised. It may be that the nature of the parent has occasionally asserted itself more strongly at one time than another. The plant in question was exhibited by Mr. W. Wilkins, Park House Gardens, Englefield Green, who kindly placed the flowers at my disposal, which I am now forwarding you. *W. Swan, Thorncote Gardens, Staines.*

[The failure of the flowers on one spike to develop the richer colouring possessed by those on the other spike may be due to one of many possible causes. In order to determine if it is a sport, let the pseudo bulb be marked, and cultivated another season.—ED.]

MASDEVALLIAS AT WOODHATCH LODGE.—On December 21, upon entering one of the Orchid houses at Woodhatch, Reigate, the residence of Mrs. Haywood, I was astonished and delighted to see a number of well-grown and splendidly-flowered plants of the well-known Masdevallia tovarensis. Altogether there were 19 plants arranged in one row through the entire length of the house, which is about 25 feet long. Each plant was a picture in itself, being literally covered with flowers; one specimen produced as many as 90 spikes, and each spike was carrying two or three white spicy-scented flowers, the aggregate number of spikes being 1,700, carrying in all over 4,000 flowers. Being a compact growing subject, throwing its flowers well above the dark-green foliage, M. tovarensis is indeed an extremely charming Orchid, and a valuable plant for decorative purposes, especially when seen in such luxuriant health as are these plants under Mr. Salter's skilful management. The plants are grown in moderately shallow pans, about 8 or 9 inches in diameter. Good drainage being essential, the pans are about half filled with broken potsherds; over these a layer of moss is placed, and in potting the plants are placed so that the surface of the compost is about level with the rim of the pan. The rooting medium is compost of fibrous peat and live sphagnum-moss in equal parts, and a very small quantity of leaf soil mixed with it. Plenty of living heads of sphagnum-moss are put on the surface, and by the time the plants are in full growth, the whole of the compost is covered with living moss. After the disturbance caused by re-potting, the plants are very carefully watered, but when they commence to make roots and new leaves, water is again supplied liberally and continued through the growing season. This Masdevallia should be grown in the cool house from April until October, and requires an abundance of air and shade. From October till April the plants thrive best in an intermediate temperature. On the day of my visit to Woodhatch, the temperature of the house was 57 degrees at 4 p.m. *W. H. W.*

HARDY PLANTS IN FLOWER IN NORTH WALES.—As proof of the mildness of the season I was able to note on Christmas Day in blossom out-of-doors in the garden here the following 40 plants:—Christmas Rose, Hardy Chrysanthemum, Carnation, Double and common Daisy, Wallflower, Polyanthus, Primrose (red, yellow and blue), Candytuft, Arabis, Snapdragon, Hepatica, Winter Aconite, Colchicum, Violets, Pansy, Lophospermum, Stocks, Aubrietia, Forget-me-not, Periwinkle, Erica carnea, E. Allporti, E. vagans, Menziesia polifolia, Jasminum nudiflorum, Teucrium fruticans, Hamamelis japonica, Laurustinus, Berberis Mahonia, Garrya, Gorse, Andromeda floribunda, Rose, Hazel, Polygala buxifolia, Escallonia Philippiana, Pernettya, Arbutus Unedo and A. Andrachne. Wild Campion and a wild flower, which, I think, is a wild Geranium. In some cases, of course, there was only one isolated flower, but some of the varieties made quite a show of bloom. Clematis Mrs. Hope has a faded flower which was in bloom a week ago. Magnolia grandiflora has a dozen big white buds, two with the outer petals unfolding. Daphne Mezereum, red and white, is out at the date of writing. No doubt others could add to this list Snowdrop, Cyclamen Coum, Iris stylosa, and Cratægus præcox. *H. D. McLaren, Bodnant Hall, Tal-y-Cafn R.S.O., North Wales.*

PROTECTING FIG TREES.—*Ficus Carica* has attempted to analyse my statements in such a manner as to uphold and substantiate his contention that the old method of thatching or protecting Fig trees is now no longer necessary. The severe winters experienced many years ago were, it is true, even more disastrous to the Fig than in recent times when the seasons have been less extreme. *Ficus Carica's* experience 700 miles north of London takes him to a district where I believe the air and climate, although severe, is light and dry, consequently the Fig is better able to stand unprotected than it is in some of the cold and wet counties of England. My practice is no rule of thumb, I have tried non-protection, and witnessed disastrous results in this vicinity. The trees here are still growing in cold, retentive soil, and although excavations be made, drainage, and a calcareous compost provided, it will not prevent the naturally moisture-laden soil from percolating into the prepared compost, rendering it cold and unsuitable. *Ficus Carica* now says (p. 457) with reference to my remark that in "some severe winters the points of unripened shoots were killed down a few inches," "I should have said when severe winters followed wet autumns." If he follows his own advice (p. 457) and has excavated holes, provided good drainage, and formed a suitable compost, he cannot now say the tips of the shoots were killed from the effects of a wet autumn; if so, of what benefit is his artificial drainage provided to carry off the superfluous water? Should he join the ranks of the protectionists again he will lose no shoots, but with good culture and properly ripened shoots he may obtain some of the finest fruits possible. *W. H. Clarke, Aston Rowant, Oxon.*

[Sufficient has now been said on this subject. A gardener may easily prove which advice is the best to be followed in his particular district by adopting the method recommended in the Calender by Mr. Clarke, but leaving one tree unprotected. The value or otherwise, however, of protection can only be determined in a severe winter.—Ed.]

Iris cretensis.—This little Iris is seldom met with in cultivation, and I have never as yet come across its name in any nurseryman's catalogue. It is a pretty flower, somewhat after the style of I. unguicularis or stylosa, to which species it is said to be allied. In comparing the flowers of the two, those of I. unguicularis are found to be considerably larger and handsomer. In I. unguicularis the falls are 3½ inches in length and 1½ inches in breadth, while the standards are 1½ inches in breadth. In I. cretensis the falls are 2½ inches in length and three-quarters of an inch in breadth, while the standards are only half-an-inch in breadth. In I. unguicularis the yellow band, which is margined with purple veining on a white ground, reaches half-way down the fall, the lower half being self-coloured lavender or purple, according to the variety, while in I. cretensis the band and veining occupies the whole of the fall except the lower half-inch, which is self-coloured. With this exception, the colouring is the same in the two species, but with the larger amount of lavender or purple in the fall the blossoms of I. unguicularis are more striking. Still, one would not care to be without I. cretensis at this season of the year. The leaves of I. cretensis are about 20 inches in length and only a sixth of an inch in breadth. It is a native of Crete, Greece, and Asia Minor, whereas the home of I. unguicularis is on the North African shores. Both require similar treatment, doing best in a light soil in a sunny position, and both flower profusely in the south-west. *S. W. Fitzherbert.*

Boycotting Judges.—With regard to the remarks of *A Judge*, p. 444, most of us are aware of the difficulty judges encounter in endeavouring to please everyone, but surely qualified men who execute their duties in a conscientious and straight-forward manner should have little fear of open criticism from exhibitors. I think Horticultural Judges are very indiscreet persons and much to blame for the position in which they often find themselves when they engage so freely in public discussion with unsuccessful exhibitors. This can only create annoyance to those interested, and a very bad impression upon those that are not. Should a question arise and an exhibitor feels that he would like the personal opinion of the judges for his future guidance, let it be obtained in privacy; then those concerned will get the knowledge they require to the satisfaction of themselves and their adjudicators. *H. Harris, [illegible].*

Frost-resistant Apple Blossom.—Mr. W. H. Divers' note upon the hardiness of Lord Suffield Apple flowers (p. 457, *Gardeners' Chronicle*, December 30th, 1905), introduces a subject of much interest and importance. I have had the opportunity of studying the behaviour of about 200 varieties of Apples in the respect named, and several of these stand out prominently for their powers of resisting frost when in flower. For some time I was very doubtful on the matter, but repeated observations have proved that the structural or constitutional differences are very marked. Stirling Castle and Lord Grosvenor have, with me, been most conspicuous for resisting sharp frosts, for the fully expanded flowers have been frozen so that all the parts could be broken short like thin ice, and yet a crop of fruit has followed. Other varieties under the same conditions have lost the whole of their blossoms. Lord Suffield I have not observed to endure frost like the two varieties named; in fact large plantations of healthy trees of that variety have been cut back and grafted with other Apples because the flowers so frequently failed from frost and other causes. Plenty of evidence is available, however, to show that Lord Suffield and a few other Apples are very quickly affected by deficient soil fertility, and some of the failures recorded are certainly due to that cause. *R. L. Castle.*

THE LONDON MARKETS AND THEIR SUPPLIES.

(Continued from Vol. xxxvi., *page 451.)*

In 1887 a Royal Commission on Market Rights and Tolls was appointed, the special objects of which were to enquire as to the extent to which market rights are in the hands of (1) local authorities; (2) trading companies; and (3) private persons, or bodies of persons. But the enquiry was also to include an examination of the revenues, distinguishing the tolls, rents, stallages, the accommodation given, and the ratio of market tolls and dues to the value of the commodities. Several interesting and important reports have been issued, but as regards questions of value and quantities much of the earlier information given is now out of date. An annual Market Report dealing with the relative quantities and proportions of home-grown and imported garden produce would be of much value, even if it was confined to a selection of the principal markets, just as are the weekly reports of prices. In all markets some form of record must be kept, but in most cases this does not distinguish the class or kind of produce, nor is the source of supply indicated. In some cases where a toll is charged at a fixed rate per basket or bag, even the total weight cannot be obtained. The essential details would not be very numerous, the work entailed in setting them out would be comparatively slight, and in a matter which affects the public interest, there ought to be little difficulty in securing the information desired.

When we turn to home-grown crops, with which the market gardener and fruit-grower are concerned, similar obstacles are encountered. For the purpose of the Agricultural Returns I am officially informed that no separate record is made of the acreage under market-gardens, and to my knowledge considerable areas are returned as farm land which are employed mainly or exclusively for vegetables and fruits grown entirely for market. Some attempt is, however, made in the Income Tax returns to distinguish such land, though not with much success, judging by the evidence of Mr. Bell, one of the superintending Inspectors at Somerset House. Under Schedule B there is a special rule for the assessment of market gardens and nurseries by which the tenant pays on the estimated profits instead of on one-third the annual value. It is stated that no certain definition exists to clearly distinguish "a market garden" or "nursery," and the rule is said to only apply to "4,749 acres of fruit-land, pure and simple, in England and Wales, and to 27,413 acres of market gardens in which vegetables, flowers, &c., as well as fruit, are grown for sale." It is obvious that the latter acreage can in no sense represent the area of the land under market garden crops in this country, especially as regards vegetables and flowers. Taking the metropolitan counties of Essex, Kent, Middlesex and Surrey alone, the area returned as under small fruit, i.e., 30,000 acres, is largely market-garden land as well. Adding the land under vegetables and flowers to the fruit lands the total cannot be much less than 100,000 acres, and it may be more, for that represents a small proportion of the area (under crops and grass) in the four counties named, viz. 1,900,000 acres.

The estimates of produce in British official records are confined to the farm crops, Wheat, Barley, Oats, Beans, Peas, Potatos, Turnips, Swedes, Mangolds, Hay, and Hops, but a portion of the acreage returned under Peas, Potatos, and Cabbages is unquestionably used for market garden purposes. In some of the foreign and colonial Agricultural Returns attempts are made not only to separate market garden and fruit or other special crops, but also to give estimates of the amount produced or their value. Thus in Bulgaria the area under Plum trees is given as 8,472 acres with an estimated produce (1898-9) of 280,984 cwts. Other fruit trees are returned as occupying 2,845 acres, and the produce is 76,675 cwts., while Rose gardens are stated to occupy 12,582 acres, yielding 133,311 cwts. of flowers. In Roumania Plums are said to have 174,619 acres, producing (1904) 5,611,742 cwts.; Onions on 10,416 acres, yielding 21,492 tons, Servia has 250,806 acres of Plums, the estimated produce (1900) being 7,268,352 cwts. Amongst the Colonies, New South Wales returns for 1903-4 the area of fruit and orchards as 27,576 acres, the estimated value of the produce being £211,318; while market and kitchen gardens are given as occupying 8,756 acres, with a produce value of £213,412. Again in Tasmania the Apple orchards are said to cover 9,819 acres, with a total produce of 977,362 bushels; and in Natal the orchards are given as 3,458 acres, the produce being valued at £53,120.

There are difficulties in the way of carrying out such a system in any country, and these would be especially marked in the United Kingdom, where the methods and results are so diversified. But even approximate estimates would be useful, and these might be obtained in many cases with little more difficulty than applies to the ordinary farm crops.

Where special districts are devoted to certain crops the railway companies would be able to furnish statistics regarding the quantities forwarded in particular directions. But the officials in the majority of cases decline to furnish any details that would be of service in forming a reliable judgment in the matter. We must therefore see what can be learned in the markets themselves. *R. Lewis Castle.*

(To be continued.)

Obituary.

John Dillwyn Sims.—We regret to record the death of Mr. John Dillwyn Sims, of the firm of Messrs. Ransomes, Sims and Jefferies, Ltd., Orwell Works, Ipswich, who died at his residence, on December 30, and was interred at the Ipswich Cemetery on January 2.

TRADE NOTICES.

The British West Indian Fruit Co., Ltd., have acquired the fruit-importing business of Messrs. W. Pink & Sons, and will conduct their affairs on the same lines as heretofore.

R. Page & Co.

The partnership hitherto existing between R. Page and J. J. Allen, Tangley Park Nursery, Hampton, Middlesex, has been dissolved, and the business will in future be carried on by J. J. Allen, at the same address as above in his own name.

St. Albans XL-All Seed Company, Limited.

This company has been registered with a capital of £2,000 in £1 shares. Object, to carry on the business of nurserymen, seed growers and merchants, &c. No initial public issue. Registered without articles of association. The first directors are W. J Hart, Jeannie S. Anderson, Mrs. J. Anderson, Margaret G. Anderson, J. Wright, T. F. Hale and T. Hale. Registered Office—591, High Road, Leytonstone.

Thomson and Company, Limited.

This company has been registered with a capital of £3,000 in £1 shares. Object, to acquire as from June 30, 1905, and carry on the business of seedsmen, nurserymen, florists, landscape gardeners, corn merchants, horticultural implement and sundries dealers, &c., carried on by R. Thomson & S. S. Thomson, at 20, High Street, and Central Avenue, Market Hall, Birmingham, and at the nurseries, Sparkhill and Shirley, as Thomson & Co., to adopt an agreement with R. Thomson & S. S. Thomson. No initial public issue. The first directors (to number not fewer than two nor more than five) are R. Thomson and S. S. Thomson. Qualification, £500. Registered Office—20, High Street, Birmingham.

GARDENERS' DEBATING SOCIETIES.

CHESTER PAXTON.—The annual general meeting of this Society was held in the Grosvenor Museum, Mr. N. F. Barnes, Eaton Gardens, presiding. The annual report of the Hon. Secretary, Mr. G. P. Miln, revealed the fact that the list of members and subscribers had increased during the year from 530 to 560. The finances of the Society showed a credit balance at the bank of nearly £80. On account of the President, Major MacGillycuddy, leaving Chester, Mr. T. Gibbons Frost was elected President for the ensuing year, Mr. N. F. Barnes being re-elected Chairman of Committee, with Mr. G. P. Miln as Hon. Secretary, and Mr. Robt. Newstead, A.L.S., as Consulting Naturalist.

EGHAM AND DISTRICT GARDENERS'.—At the last fortnightly meeting of this society, Mr. W. Swan in the chair, Mr. G. Baskett, of Woodlea, Virginia Water, read a paper on " Orchard House Fruits." The essayist mentioned two suitable types of orchard houses, the one a span-roofed house running from north to south and the other a three-quarter span running east to west. Both should be provided with means for providing plenty of ventilation. Mr. Baskett also gave cultural details and a list of varieties of fruits suitable for the purpose. A discussion followed. *T. J. W.*

SHIRLEY, MILLBROOK, AND FREEMANTLE HORTICULTURAL.—The annual meeting of this society was held at the Shirley Hotel on Friday, December 22. The fortieth annual report showed that notwithstanding having to start the year with a deficit balance of £2 14s. 2d., the committee were able to put before its supporters a very satisfactory condition of affairs. The balance sheet showed a total receipt of £107 15s. 0d., of which £36 13s. 0d. represented subscriptions and £38 7s. 3d. money taken at the gate. There was a balance in the bank of £12 16s., and in the treasurer's hands of £6 11s. 5d. The officers of the society were all re-elected and Messrs. Fry and Sheppard included in the committee.

PLYMOUTH AND DISTRICT BRITISH GARDENERS' ASSOCIATION.—A well-attended meeting of the above Association was held in the schoolroom, Ivybridge, on December 20, John Bayly, Esq., in the chair. A paper was read by Mr. W. Selley, of Delamore, Cornwood, on " Fruit Culture." The essayist dealt with the Vine, Peach, Nectarine and Apple, giving the leading varieties of these fruits and the proper methods of their culture under glass, including propagation, pruning, planting, etc. A discussion followed, and a number of questions put to Mr. Selley were ably answered. Collections of Apples were displayed by Mr. F. Seward, gr. to the Earl of Morley, Saltram, and by Major Parker, of Delamore, Cornwood. The latter also exhibited plants including Begonias, Cyclamen, &c.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending December 30, 1905:—

1905.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 a.m.			Rainfall.	Sunshine.	
	At 9 a.m.		Day.	Night.							
December 21 to December 30.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-foot deep.	At 4-foot deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
Means	39	38	44	35	33	41	43	45	Tot 0·19	—	36

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending December 30, is furnished from the Meteorological Office :—

The *weather* was generally mild and rather dull over the Kingdom as a whole, but rain was neither heavy nor frequent over England. In the Channel Islands and Scotland E. small amounts fell on four days, and in Ireland somewhat larger quantities on four or five days.

The *temperature* was above the mean in most districts, equal to it in Scotland N., England N.W., and the Midland Counties, and slightly below it in Scotland E. In Ireland S. the excess was as much as 4°. The highest of the maxima were registered early in the week, and were 50° or above in every district except England E. In Ireland S. the thermometer rose to 56°. During the early part of the week the minima were very high for the time of year, but they became much lower some days later, and towards the close of the period they ranged from 20° in Scotland N. and E. and 22° in England S.W. to 31° in Ireland S. and to 37° in the Channel Islands.

The *rainfall* was considerably in defect over Great Britain, but equalled the mean in Ireland S. and exceeded it in Ireland N.

The *bright sunshine* exceeded the normal in the Channel Islands, Scotland N., and England N.W., but in all other districts there was a deficiency. The percentage of the possible duration ranged from 25, 22 and 21 respectively in the three districts just named to 10 in Ireland S. and to 4 in Scotland E.

THE WEATHER IN WEST HERTS.

Sudden changes in temperature.—On the first day of the week the temperature in the thermometer screen rose to 45 degrees, but a few days later only to 34 degrees, since which it has risen to 47 degrees. Then on one night the exposed thermometer fell only to 35 degrees, whereas on the coldest night the same thermometer registered 10 degrees of frost. The ground temperatures have fallen, and are now about seasonable, both at one and two feet deep. Nearly three-quarters of an inch of rain fell during the week. On the 2nd inst. the fall, although little more than a quarter of an inch, was the heaviest for any one day for five weeks—showing how very dry for the time of year the weather has recently been. Two gallons of rainwater came through each of the percolation gauges. The sun shone on an average for about three-quarters of an hour a day, which is about half an hour a day short of the usual duration at this season. Calms and light airs again prevailed. For the first time for four weeks the direction of the wind was some point between North and East. There was again about a seasonable amount of moisture in the air at three o'clock in the afternoon.

DECEMBER.

Exceptionally dry and calm.—This was a warm December, with no cold period worth mentioning. On the warmest day the temperature in the thermometer screen rose to 54 degrees, and on the coldest night the exposed thermometer showed only 13 degrees of frost—the latter a remarkably high minimum reading for the month. Rain fell on but thirteen days, and to the aggregate depth of little more than an inch, which is less than half the December average. It is now fifteen years since the last month of the year has been as dry. The total fall for nineteen consecutive days amounted to only about a tenth of an inch. The sun shone on an average for little more than an hour a day—which is ten minutes a day short of a seasonable duration. Only twice before in the last twenty years has the atmosphere in December been as generally calm. At no time did the velocity of the wind in any hour exceed thirteen miles. The direction of the wind was for only thirty-six hours altogether from any point between north and east. The atmosphere was not only calm, but humid, the mean amount of moisture in the air at 3 p.m. exceeding the average by 2 per cent.

THE YEAR.

Taking the past year as a whole, the temperature has been about average. The only cold months were August, September, October, and November. The most unseasonably cold ones were October and November, and the most unseasonably warm ones February, March, and July. The total rainfall fell short of the average by 4¼ inches. There were no very wet months. The sun shone on an average for four hours a day, or for about five minutes a day longer than usual. The sunniest months were May and July.

Our Underground Water Supply.—The rainfall for the last three months has fallen short of the average for the same period in the last 50 years by 2¼ inches, which is equivalent to a loss of rain on each acre in this district of 50,450 gallons. *E.M., Berkhamsted, Jan. 3, 1906.*

HARRISON WEIR.—The *Central News* announces (Thursday afternoon) the death of this distinguished artist at 10 p.m. on the 3rd inst. In our next number we shall make allusion to the work of our old friend and contributor.

ENQUIRY.

VINES, WHITE NICE AND BLACK DAMASCUS.—Can any reader tell us where either of these varieties are now growing? They appear to have passed quite out of cultivation. *K. W. and Co.*

ANSWERS TO CORRESPONDENTS.

⁂ EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

ADDRESS: *T. R. P.* J. Forbes, Nurseryman, Hawick, Scotland.

CORRECTION, see p. 447, col. 1, For Cypripeduim, read Cymbidium Maggie Fowler.

DAISIES IN LAWN: *J. F.* If the lawn is in such a bad state as you have described, it will be best to eradicate the daisies by spudding them out by the roots. Afterwards apply a little rich top dressing over the entire lawn and sow fresh grass seeds in March in places where they appear to be required.

ECZEMA: *A. E. B. & R. P.* It is a well-known fact that some persons are subject to severe skin irritation from handling bulbs and Daffodil blooms, probably due to the minute needle-like crystals which abound in the plants. The fact that Primula obconica also causes severe skin irritation is well known. In both cases the affection is local only, so that it is only necessary to avoid handling the plants to get rid of the irritation. True eczema, due to constitutional causes, is a different matter altogether, and for its treatment you should apply to a medical practitioner.

NAMES OF FLOWERS: *W. C.* We cannot undertake to name varieties of Chrysanthemums. Send them to a nurseryman who can probably match your flowers in his collection.

NAMES OF FRUITS: *A. Chapman.* Passe Colmar. *Gardener, Norfolk.* 1, Uvedale's St. Germains. Usually a good grower and heavy cropper. One of the best varieties for stewing; 2, Easter Beurré a variety that succeeds well against a wall, but requires a good deal of thinning and watering during the growing season to produce fruits of the finest quality; 3, Sam Young; 4, Rymer; 5, Brabant Bellefleur.—*J. E. S.* Green Tiffing.

NAMES OF PLANTS: *W. & E.* 1, Monstera deliciosa; 2, Cestrum fasciculare; 3, Trachelospermum jasminoides; 4, Juniperus chinensis; 5, Taxus baccata aureo-variegata; 6, Eriobotrya japonica.—*J. O. C.* Kindly send further specimens of the Codiæums you require to be named.—*A. Y. L.* 1, Epidendrum floribundum; 2, Liparis longipes.—*B. M.* 1, Oncidium stramineum; 2, Stelis micrantha; 3, Polystachya Oltoniana; 4, Angræcum arcuatum.—*F. W. C.* The essential part of the inflorescence of the grass is wanting. Send perfect specimen.

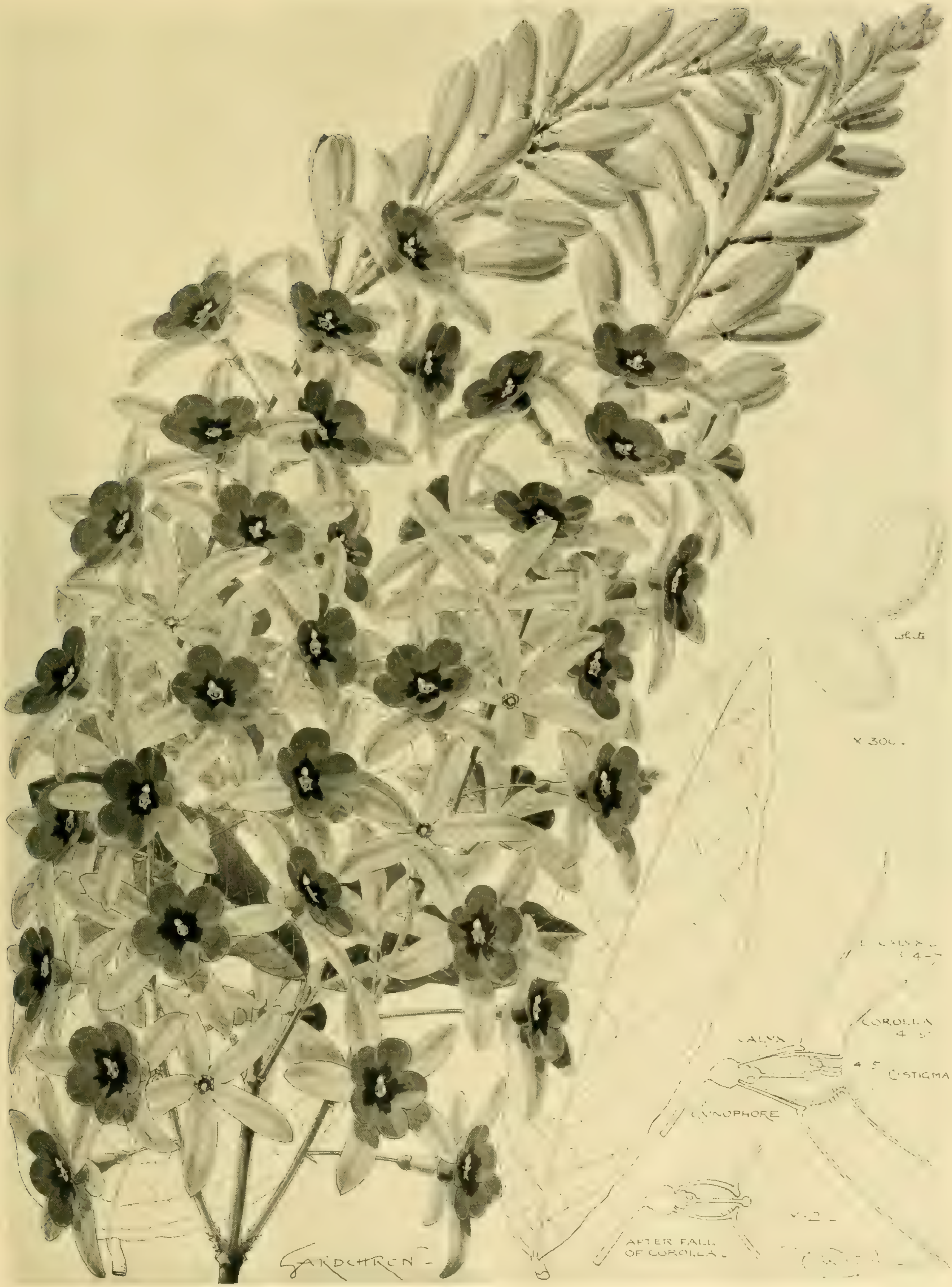
POINSETTIA: *R. E. F.* The structure is essentially the same as in the common Spurges (Euphorbia). The "inflorescence" may be said to begin with the first coloured bract. Within these red-floral leaves or bracts is a dense mass of small flowers with glands. There are no true sepals or petals, and the male and the female flowers are separate, though approximate. The "glands" secrete honey, the coloured bracts show where the nectar is to be found. The plant is a native of Mexico, but we are unable to inform you what insects visit the flower. In this country probably flies would find the honey to their taste if it be not imbued with the poisonous quality one would expect to find more or less developed in the plant. Now-a-days botanists are agreed that the plant is a true Euphorbia, and speak of it as E. pulcherrima. The name Poinsettia, no doubt, will still continue to be used in gardens.

SITUATION IN THE UNITED STATES: *E. J. H.* That there are good openings in the United States for well-trained English gardeners is proved by the success already obtained by many who have gone there previously. Your best plan will be to advertise in the American horticultural papers, or write to several of the best known nurserymen in New York and Boston.

VINERY: *C. J. S.* No absolute rule can be laid down in regard to the number of times a vinery should be afforded water during the summer season. Much will depend upon the position of the border, the character of the soil, the efficiency of the drainage, the degree of sunshine, and the number of roots there are in the border. If you have had practical experience in the cultivation of plants, you will be able to determine when the soil is becoming too dry for the roots to obtain full benefit from the food it contains, but if you have not had such experience we are afraid we cannot enable you to act exactly as those who have. The border should not be allowed to get very dry even in the winter season, although much less water is required at that period than others.

COMMUNICATIONS RECEIVED.—M. Labergerie, Verrieres France—W. L. M., Texas—R. J. A.—S. A.—Director Kon. Pomolog. Institut, Proskau—D. S. F.—H. R.—G. H.—L. R. & Co.—A. R. G.—E. B.—A. W. S.—A. F.—F. E. B.—D. & Co.—Sir J. R.—F. W. C.—W. F.—F. B.—M. & Sons—T. H. W.—F. S.—F. K.—E. M.—Chloris—W. & Co.—J. C.—N. S.—H. W.—H. W. (Vines)—A. O.—J. S.—J. F. D.—S. A.—W. B. H.—J. D. J.—Gardeners' Royal Benevolent Institute—J. Pentland—H.W.W.—H.A.P.—T. Humphreys—W. H.—J. Wallis.

For Market Report, see page xii.



PETREA VOLUBILIS, FLOWERS PURPLE. NOTE THE LARGE SIZE OF THE POLLEN-GRAINS.
FROM THE GARDEN OF SIR TREVOR LAWRENCE, BART., K.C.V.O.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 994.—SATURDAY, January 13, 1906.

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THE TRUE PROVINCE OF NATURAL SELECTION.

IN a previous article on "The True Darwinism" (see Vol. xxxviii., p. 401), I pointed out that "ecologists" are rapidly replacing the conception that specific characters arise by means of natural selection, by the view that there is an immediate and responsive adaptation to changed conditions of life; and, in conclusion, I observed that the assertion that "No one had ever seen Natural Selection in action," might be replaced by the statement that "Everyone may see natural selection everywhere in action," whenever two or more plants are contesting for the same area, or any plant alone with an inhospitable physical environment. But the issue of the struggle determines the *Distribution* of species and not their *Origin*. I purpose now illustrating this fact:—

First, however, it is necessary to observe that Darwin says that the struggle for existence and the survival of the fittest is "the Doctrine of Malthus applied with manifold force to the whole animal and vegetable kingdoms"*; and he devotes the third chapter to explaining how "the geometrical ratio of increase" only leaves an average amount of beings to survive.

All this is true enough, and runs parallel with Malthus' statements; but in applying that writer's theory to *The Origin of Species*, Darwin was obliged to introduce the factor of *Morphological Structures*; because it is on *these alone* that systematists found their specific characters. However impoverished a being may be which succumbs in the struggle for existence, such a condition has nothing to do with the origin of species, which is based on structure alone.

This is obviously not only a weak point in Darwin's theory, but, as I maintain, an uncalled-for addition to Malthus' argument. That variations of structure among seedlings have been a source of injury, detriment and destruction to them, has never been exemplified. In a mass of seedlings of any kind, some start in the race better equipped than others, by having been better nourished in the ovary, and by starting into growth earlier. The result is that many succumb because they do not get enough light, air, water or food. But specific characters are not, as a rule, developed in the extremely young state when thousands of them perish.

Malthus says that the ultimate check to population is want of food. The immediate checks are diseases, customs, as well as "all those causes . . . whether of a moral or physical nature, which tend prematurely to weaken and destroy the human frame."†

To add, therefore, structure, on the one hand, as a possible cause of elimination, as being "injurious"; or, on the other hand, as "favourable" or even neutral, in enabling the seedling to survive, had no place in Malthus' *Essay*; and—unless practical experience could show there might be some grounds for it—such should not have been inserted; consequently "The Origin of Species by means of Natural Selection" has no basis in fact.

In order to illustrate true natural selection, it will be as well to choose simple and easily-seen instances; for, as soon as an observer has had his attention called to it, just as occurred to Darwin in the matter of Adaptation in 1876, "proofs will be plentiful."

Let us take a derelict meadow, still retaining the ridges and furrows which it had when it was formerly arable land. Such may be seen by hundreds in the Midlands. In early summer the bulbous Buttercup (Ranunculus bulbosus), naturally a xerophyte, but adaptable to moisture, as in a uniformly wet meadow, may be observed covering the ridges, sometimes 20 feet across, but they stop short about one foot from the bottom of the furrow, on each side of it. In the furrows there is not one plant. If the achenes or fruit could spread over 20 feet, there could be nothing to hinder them from filling the furrows. They perish, presumably, from excessive moisture.

On the contrary, R. acris, the field Buttercup, affects the furrows rather than the ridges. Adaptation and natural selection thus effect the distribution of these two species. As another instance of seeds failing to germinate, apparently because they cannot stand a struggle among grass, is the Wild Chamomile (Matricaria Chamomilla). This is a common weed on arable land, at the corners and edges of the fields where it has some freedom; but, by whatever means the achenes unprovided with pappus manage to reach the grass outside the field and between the hedge and the road, it will be found to occur plentifully on any bare place, as where a heap of stones had been deposited, or where turf had been cut, etc., in each case being sharply bounded by the grass surrounding it, in which not a single plant occurs.

As another instance, a Quickset hedge is fringed at its base with a long line of Hordeum murinum. This runs along the edge of an asphalt footpath. On the other side of this is a strip of grass, one foot wide, entirely composed of Rye-grass (Lolium perenne). In the depression beyond, where the road begins, there are Plantains. These three different species have thus been located by natural selection and adaptation.

Turning to cases of intense struggle between totally different species, on the broad pieces of grass on either side of a road—a common feature in Warwickshire—numerous interlopers may be seen, elbowing their way and ousting the grass. The following are examples:—Dutch Clover, creeping Buttercup, Coltsfoot, stinging Nettle, dead Nettle, Bracken; and, in damp shady places, ground Ivy, etc. Now, there are two features which apply to all of them—viz., a broader foliage and creeping stems. The latter rooting at the surface absorb the superficial moisture, the result being that the grass is starved. Mr. T. Kirk attributes to the same causes the case of the Dutch Clover bringing about the destruction of the New Zealand Flax (Phormium tenax).

A point to note here is one which concerns plant-surveying, for in many "formations" or "Plant-Associations" it must be borne in mind that the collection of species may be different to a greater or less degree, say, in five years' time. Thus there are two meadows in the experimental grounds at Rothamsted which have not been touched for twenty years. A census of the number of species in each was taken in 1862, again in 1867, and also in 1872. In one the number had varied from 44 to 50, and the other from 50 to 43 and 49, respectively, while the grasses, leguminous plants, and "mixed herbage" had also varied between the periods when each census was taken.

As another illustration the following is one of changes in a copse. In woods the struggle for existence is often intense. In a certain small wood in Warwickshire a quantity of Campanula latifolia was abundant some five years ago, forming a perfect "sheet of blue." At the present time not a plant is to be seen. Mercury and nettles have invaded the place by means of their creeping stems and driven the Campanulas away.

On the other hand in another open wood Foxgloves have driven out pretty well everything else, and now form an immense mass of purple. It was long ago observed that if Oaks and Beeches be planted together, after some years nothing but Beeches will be left.*

Now let us consider the case of a hedge.

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* Origin of Species, &c., 6th ed., p. 50.

† Essay on Population, 7th ed., p. 7.

* The Forest Trees of Britain by Rev. C. A. Johns, p. [illegible]

It is made of Quickset (cratægus); but birds (presumably) have dropped berries or seeds of Elder, Privet, Holly, Mountain Ash, &c. The seeds have germinated, grown into goodly-sized bushes and trees, and completely destroyed the hedge wherever they occur.

Another common occurrence is for the roots of an Elm tree to run along the bank under the hedge and send up innumerable suckers, until the Quickset has been completely converted into an Elm hedge for several yards on both sides of the tree.

As an example of an annual expelling perennials, I made a lawn with turf cut from a hay-field; but there was a good deal of Poa annua, as a weed, in the garden. It invaded the lawn, and as the lawn was regularly mown, it seeded profusely, gradually superseding the perennial grasses, becoming itself a perennial till the whole lawn was made up of it.

This shows how plants which oust others under one condition will be themselves destroyed under a different state of things; for while Poa annua, Daisies, and Plantains have all their own way in a mown lawn, let the latter return to a hay-field and the usual perennial grasses will soon assert their superiority and prove themselves to be the better adapted to survive under the circumstances.

Natural selection is thus and in many other ways seen to be dominant everywhere. It accounts for the presence and *distribution* of species in any plant-association; but it has nothing whatever to do with their *origin*. *George Henslow.*

NEW AND NOTEWORTHY PLANTS.

THE GENUS CORYLOPSIS,

WITH A DESCRIPTION OF A NEW SPECIES.*

THE genus Corylopsis was founded by Siebold and Zuccarini (*Flora Japonica*, Vol. I. (1835), p. 45, tt. 19 and 20), who described and figured the now well-known C. spicata (*Gardeners' Chronicle*, 1865, p. 172) and C. pauciflora (*Gardeners' Chronicle*, 1899, Vol. XXV., p. 211, f. 80) from specimens cultivated in Japan, both of which have since been found growing wild in that country. They also mention (p. 49) a wild species, to which they gave the name of Kesakii, stating that it differs essentially from the other two in foliage and in fruit, but without giving the points of difference. Miquel (*Ann. Mus. Bot. Lugd.-Bat.*, Vol. III., p. 207) describes the leaves; but both flowers and fruits were unknown to him. The most obvious difference is the smaller number—five or six on each side of the midrib—of primary lateral veins. There is one small, barren branch in the Kew Herbarium which I take to be this species, and, if I am right, it is a slenderer plant than C. pauciflora.

Franchet and Savatier describe (*Enum Pl. Jap.*, Vol. II., p. 367) a fourth Japanese species—C. glabrescens—which "differs from C. spicata in the primary veins of the leaves being more numerous and closer together, and in the axis of the inflorescence and the calyx being quite glabrous." I have seen no specimen that I could refer to this species.

In 1837-8 William Griffith collected specimens of Corylopsis, both in Bhotan and Khasia, and they were subsequently described (*Journ. As. Soc. Bengal*, Vol. XXIII. (1854), p. 641, with a figure) as C. himalayana. In 1884 a cultivated Corylopsis was figured in the *Botanical Magazine*, t. 6,779, under the name of C. himalayana.

A Chinese species—C. multiflora—had, in the meantime, been described (*Ann. Sc. Nat.*, 4 me. série, Vol. XV., p. 224) by Hance.

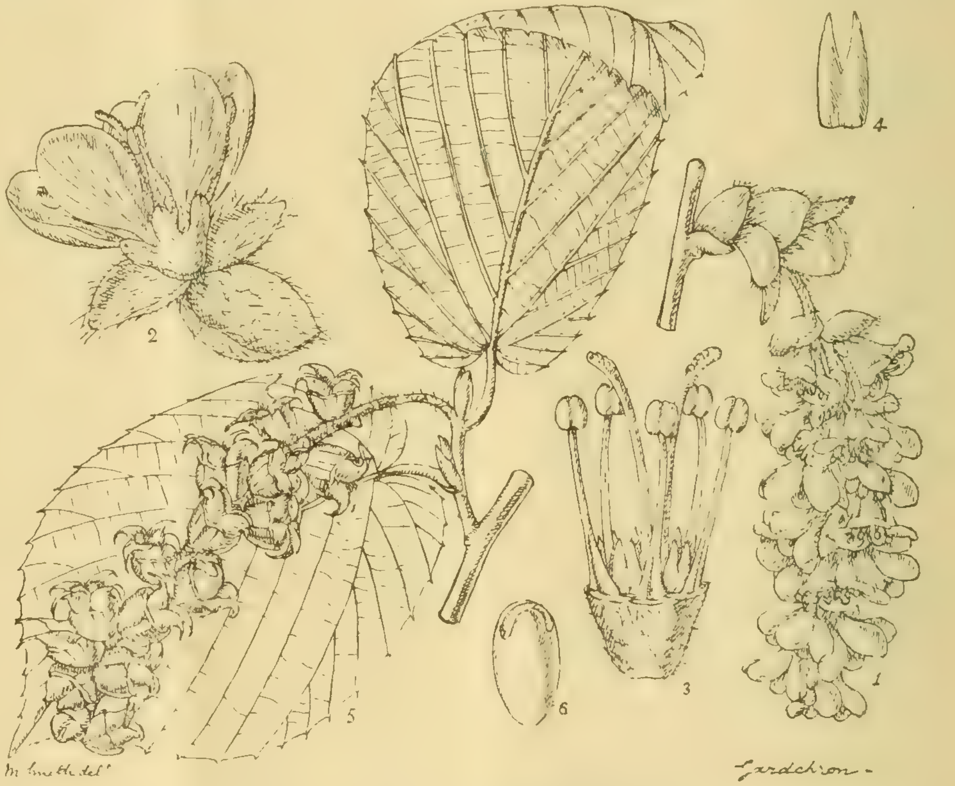

FIG. 12.—CORYLOPSIS SINENSIS (HEMSLEY).

Fig. 1, flowering branch of Corylopsis sinensis, Hemsley, bearing near the base two undeveloped leaves, which are almost concealed by the stipules. Fig. 2, a flower, subtended by a bract and two bracteoles. Fig. 3, a flower from which the calyx-lobes and petals have been removed. Fig. 4, a nectary or staminode. Fig. 5, fruiting-branch bearing two fully-developed leaves. Fig. 6, a seed. Figs. 1 and 5 natural size; the rest enlarged.

Both Dr. A. Henry and Mr. E. H. Wilson collected specimens of Corylopsis in various localities in China, and two species at least have been raised by Messrs. James Veitch and Sons from seeds sent home by the latter.

One of these flowered last spring, and, on comparing it with the dried specimens, I discovered that Kew possessed two or three, or perhaps even more, undescribed Chinese species. This led to an examination and comparison of the specimens from the mountains of North India, and the discrimination of three species instead of one. The main botanical results of these investigations will appear in the forthcoming part of Hooker's *Icones Plantarum*; but I will here give a few notes on the genus Corylopsis as a whole, and a description of the species flowered by Messrs. Veitch.

Among deciduous shrubs or small trees, flowering in winter or early spring, the species of Corylopsis constitute a very distinct and elegant type; and of those in cultivation C. spicata is perhaps the most ornamental. The foliage, which is very much alike in all the species, bears a general resemblance to that of the Lime and Hazel (Corylus), hence the generic name; but it exhibits quite peculiar and distinctive characters. As in many other plants, the leaves of the flowerless shoots are larger and somewhat different in shape from those of the flowering shoots. Otherwise they are alike, and their prominent characteristic is afforded by the straight, parallel, primary veins, which run out from the midrib at an acute angle, and terminate beyond the margin in small, thickened teeth. A few secondary and tertiary veins run out in the same way below the middle of the leaf. In the bud the leaves are beautifully folded, the pleats corresponding to the primary veins. The young parts are mostly clothed with long, silky hairs, simple and stellate intermixed. The flowering and fruiting branches present very great differences, and I will try to describe the nature of the evolution. A young flowering branch is not unlike that of the female Hop; but its composition is quite different. At first it is horizontal, or nearly erect, but as it lengthens it droops, and it hangs almost straight down in the flowering stage. It then consists of an axis bearing a few brown, empty scales at the base, followed by one, two, or three pairs of opposite organs, bract-like in texture and colour, but which are really stipules, as is attested by the presence of as many young leaves. Then come the sessile flowers, each one subtended by a bract and two lateral bracteoles. After flowering, the axis still further elongates, and straightens and stiffens; the stipules fall away, the leaves develope, and the Hop-like body becomes an ascending or erect branch, bearing one, two, or three leaves, and terminating in a rigid spike of seed vessels. The stipules of the barren branches are smaller and different in shape and even more caducous. The nature and composition of the flowering shoots of many Willows is almost exactly the same as in Corylopsis, except that the stipules are smaller on the flowering than on the barren shoots.

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* *Corylopsis sinensis, Hemsley*; species nova ex affinitate C. spicatæ et C. Griffithii; ab illis foliis supra medium latioribus, ramulorum floriferorum stipulis latioribus quam longis, petalis fere orbicularibus abrupte unguiculatis et seminibus albis recedit; a C. Griffithii etiam staminibus petala fere æquantibus et nectariis vel staminodiis 5 planis bifidis differt. Frutex vel arbor 10—15 pedalis, ramulis annotinis glabratis, hornotinis pubescentibus. Folia breviter petiolata, demum subcoriacea, obovato-oblonga, rarius fere ovalia vel orbicularia, sæpius 2—3 poll longa, apice abrupte breviterque acuminata, acuta vel obtusa, basi cordata, lobis brevibus, interdum leviter obliqua, calloso-denticulata, dentibus venas excurrentes terminantibus, primum utrinque, præcipue subtus, pilis longis sericeis stellatis vestita, supra demum glabrescentia; venæ primariæ laterales utrinque circiter 8, Stipulæ ramulorum floriferorum fere orbiculares, coloratæ; ramulorum sterilium lanceolatæ, acuminatæ. Calycis lobi ovales, glabrescentes, Petala lutea, fere orbicularia, unguiculata. Stamina petala fere æquantia, antheris luteis. Staminodia calycis lobos excedentia. Styli basi pubescentes, Semina alba.—*C. spicata*, Hemsley in *Journ. Linn. Soc.*, vol. xxiii., p. 290, non Siebold et Zuccarini.

The structure of the flowers of Corylopsis is very simple, consisting of a calyx tube, more or less adherent to the ovary, with or without five free lobes or teeth; five petals; five stamens; five or ten bodies, variously described as scales of the disk, glands of the nectary and staminodes; a two-celled ovary, one pendulous ovule in each cell, and two long, slender styles. The fruit is a woody capsule, splitting open to allow the seeds to escape the bifid valves tipped by the hardened bases of the split styles.

Corylopsis sinensis differs from C. spicata, to which it is most closely allied, in the stipules of the flowering branches being broader than long; in the leaves being broadest above the middle; in the orbicular petals being suddenly narrowed into a distinct claw; in the yellow anthers and white seeds.

The Bhotan and Khasyan specimens, doubtingly referred as varieties by Griffith to the C. himalayana, I consider as representing two distinct species, and to the former belongs the name himalayana, of which G. grata is a synonym, used by Griffith in the publication cited above in his description of the plate, and on the plate. This species has not been collected since Griffith's time.

For the plant cultivated as C. himalayana I propose the name Griffithii, and I shall discuss the differential characters of these two species in another place. C. sinensis inhabits the provinces of Kiangsi, Hupeh and Szechuen, and flowers freely while still quite young and small. *W. Botting Hemsley.*

CHRYSANTHEMUMS.

AN AUDIT OF JAPANESE VARIETIES.

I have made a careful audit of the varieties contained in the winning prize stands of 36 Japanese and 24 incurved Chrysanthemums throughout the country and the following shows the number of times that individual varieties have been exhibited. Altogether some 130 varieties have been shown in the prize stands. It will be noticed that last year's novelties have not been shown very extensively, the two most prominent in this respect being Mrs. W. Knox and Mrs. T. Dalton.

JAPANESE.

Position.	Name	Times Shown.	Position.	Name.	Times Shown.
1	F. S. Vallis	50	18	J. Lawrence	9
2	Mrs. F. W. Vallis ...	33	18	Mde. Gustave Henry	9
3	Bessie Godfrey ..	29	18	Madame Carnot	9
4	Mde. Paolo Radaelli	25	22	W. A. Etherington ...	8
5	Mrs. Barkley............	24	22	Miss Mildred Ware. .	8
6	W. R. Church	19	24	C. Montigny	7
7	J. H. Silsbury	18	24	Miss Olive Miller ...	7
8	Mrs. J. Dunn	17	24	M. Louis Remy	7
8	Valerie Greenham ...	17	24	Edith Smith	7
10	Henry Perkins	16	24	Kimberley	7
11	Duchess of Sutherl'nd	15	29	President Viger	6
12	Mrs. G. Mileham ...	13	29	Mrs. J. Hadaway.....	6
12	Mafeking Hero	13	29	Mrs. C. Beckett	6
12	General Hutton	13	29	Mrs. W. Knox	6
15	Miss Elsie Fulton ...	11	29	Godfrey's Pride	6
15	Lady Conyers	11	29	Miss Stopford	6
17	Mrs. Mease	10	29	Mrs. J. Lewis	6
18	Marquise V. Venosta	9	35	Mrs. Bryant	6

INCURVED.

1	C. H. Curtis	24	13	W. Pascoe	6
2	Buttercup	15	13	Miss Nellie Southam	6
3	Mrs. F. Judson	13	13	Duchess of Fife	6
3	Pantia Ralli	13	13	Madame Ferlat	6
5	Topaze Orientale.......	11	17	Nellie Threlfall	5
6	Ialine	10	17	Mrs. C. Crooks	5
7	Emblemé Poitevine	9	17	Lady Isabel	5
7	William Biddle	9	17	Fred Palmer............	5
9	Mrs. J. Seward	8	17	Frank Hammond ...	5
9	Mrs. J. P. Bryce	8	17	Miss E. Seward	5
9	Mrs. Barnard Hankey	8	17	Souv. de William Clibran	5
9	George W. Matthew	8	24	H. J. Jones	5

H. S. Kemp, Glencoe, Tunbridge Wells.

CYPRIPEDIUM TESSELLATUM RUBENS.

The attractive and distinct flower shown in fig. 13 was exhibited by Messrs. Sander & Sons, St. Albans, at the meeting of the Royal Horticultural Society on 19th ult., when the Orchid Committee granted it an Award of Merit. The colour of the flower is almost unique, being of a dark shade of red, with an infusion of yellow, and including some purple spotting. It is the result of a cross between C. concolor and C. barbatum grandiflorum. Not the least beautiful portion of the plant is the foliage, the markings on which present a pleasing tessellated appearance.

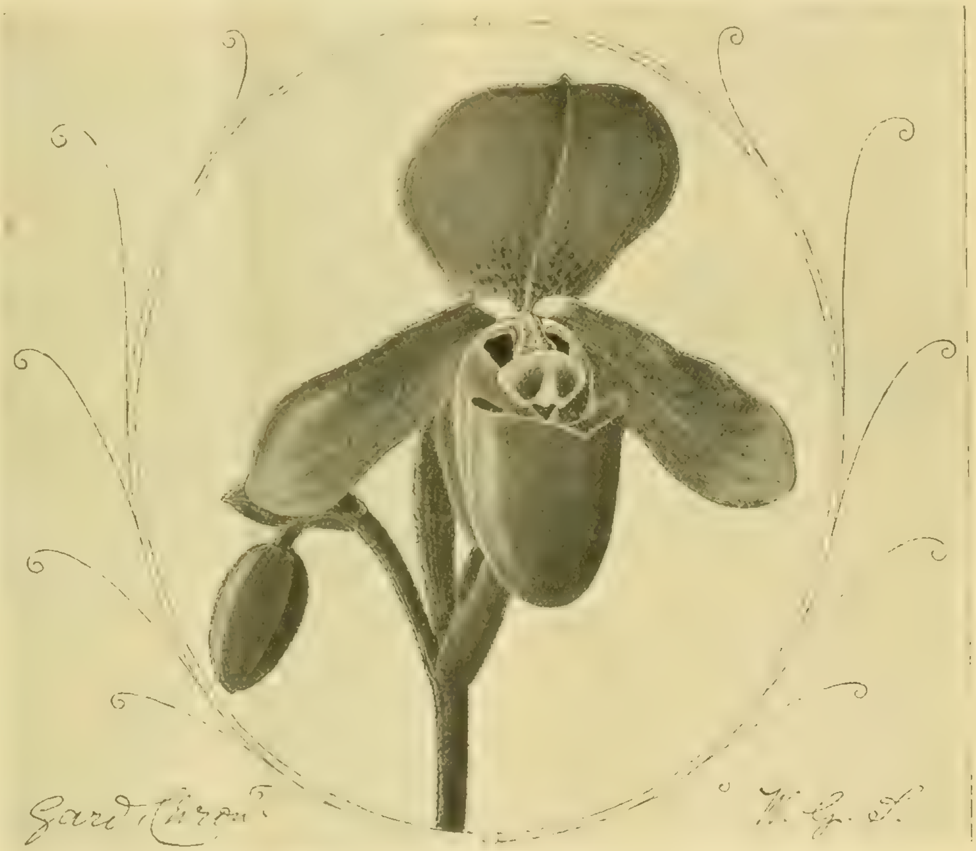

Fig. 13.—Cypripedium tessellatum rubens.

VEGETABLES.

EARLY POTATOS.

How is it that amidst the wealth of new varieties the old Ashleaf Kidney seems almost lost, whilst the perhaps older Walnutleaf Kidney, once resuscitated as Mona's Pride, seems to have entirely disappeared. Good as the Ashleaf and Walnutleaf Kidneys were they had their faults, and sometimes failed to give a satisfactory crop. Although classed as first earlies, they were not so early as the newer varieties. There was, however, a characteristic flavour in the cooked tubers that is not always apparent in other varieties. It would be specially interesting could we have a real trial of early Potatos at Wisley this year. It has been shown during the past year that Potatos succeed well on the Wisley soil, and that those grown there develop excellent quality. Potato trials there, as formerly at Chiswick, usually suffer from the neglect of those who send tubers for trial to specify the ripening season of the varieties, whether early, mid-season, or late; also the average height of plant-growth. All such information should be rigidly insisted upon on pain of neglect to test any variety received. If this information were afforded it would then be easy to plant each section separately, and thus ensure a very satisfactory trial. Still farther, every set of tubers should be sent in not later than the middle of March so as to give time for the tubers to be set up in boxes to sprout ready for planting. By this sprouting alone much would be done to enable identity or distinctness to be recognised, as the elucidation of synonyms should be an important feature in any trial. To avoid the harm so frequently done to Potato tops in the spring, planting should be deferred until the last week in April. Many a first-rate variety, in trials of this description, has suffered in reputation so far as cropping was concerned, because of the injury from frost inflicted in the spring.

Besides such a trial (and here I would add that the place of growth of the tubers of each variety should also be stated) there should be not later than the end of July or early in August an exhibition in London of early varieties. It is not needful to have many classes. A few would suffice so as to bring samples of lesser known varieties more fully before the public. Good samples from the Wisley collection should also be staged, and doubtless members the trade would readily send collections, not necessarily large ones, but such as would enable the public to note good varieties, with which, so far, they may not be generally familiar. Such an exhibition would in no case introduce the huge ungainly tuber so often seen at late exhibitions. It would also emphasise the importance of first early Potatos to the consumer, an importance that is just now somewhat overlooked when late varieties only are exhibited. We are getting very fine additions to our first early varieties every year. This season Messrs. Sutton & Sons are offering for the first time a semi-kidney in Gladiator, one of great excellence; and from Scotland both Messrs. Dobbie & Co. and Mr. T. A. Scarlett are offering their Midlothian Early. From the same sources comes the earliest of the Rosebery strain in Dalmeny Early. No doubt there are others offered as well and not yet widely known, but if some half-dozen only of quite new early varieties come out each year, then the numbers of the section must grow rapidly. Of older varieties there are Harbinger, May Queen, Ringleader, Sharpe's Victor, Duke of York, Early Puritan, Beauty of Hebron, Sharpe's Express, Pride of Tonbridge, Sir J. Llewellyn, Snowdrop, Recorder, Epicure, Ninetyfold, and many others, all more or less favourites with various growers. A cooking test for first earlies would also be most interesting, especially were the old Ashleaf Kidney, always so much liked for its yellowish flesh and pleasant, nutty flavour, included as a test variety. There is to be a special competition for early Potatos at Marks Tey, Essex, on August 1, when no doubt many excellent varieties, new and old, will be seen. But what is needed is a tuber competition and growing trial, such as the Royal Horticultural Society could conduct at Vincent Square and at Wisley. In the past the Society's trials have been confined too much to the testing of varieties. We need wider experiments now, and early Potatos present most excellent material to start with. *A. D.*

OUT-DOOR GRAPES AT DROITWICH.

AT fig. 14 is reproduced a photograph of the out-door vines in the Worcestershire experimental garden at Droitwich, which was obtained at the time the fruit was being gathered last autumn for the purpose of making into wine. Mr. J. Udale, who is the chief horticultural instructor for the county, cultivates in the manner shown in the illustration about 40 vines of the variety Gammy Noir. This is the same variety as is grown in the Marquis of Bute's vineyards near Cardiff, which were planted by the late Mr. Pettigrew in 1886, and subsequently, and of which a descriptive account was published in these pages on September 9, 1893. Those at Droitwich are cultivated on the same system as is practised at Cardiff, and before establishing the latter vineyards the late Mr. Pettigrew studied personally the conditions of the vineyards in France, and the practices adopted there. The vines are cut down to within two feet of the ground each year, and below this point are pruned to long spurs. A stout stake is fixed near each vine, and the young growth tied thereto and allowed to extend to the top of the stake, where it is stopped. The reason for cutting the vines near down to the ground as Mr. Udale explains in his recently-published work, *The Handy Book on Pruning*, is to secure to the Grapes the latent warmth of the soil, which materially aids their ripening.

The figure abundantly shows that good crops are obtained at Droitwich, and we have reason to know that the Grapes last season, some of which were exhibited at the Birmingham Chrysanthemum Show, were ripened sufficiently for use in making wine.

SEED PACKING.

IN the *Gardeners' Chronicle* for February 11, 1905, p. 90, there is a note of mine on seed packing, in which I stated that "For seeds generally I know of nothing better than paper packets and calico bags, and the more moisture there is in the seeds themselves when thus packed the better. Hermetically-sealed tins or bottles should never be used." In subsequent issues of the *Gardeners' Chronicle* this recommendation was adversely commented upon; Messrs. J. CARTER & Co. wrote (p. 124):—"It has been over and over again proved that the ordinary vegetable and flower seeds will rarely retain their vitality if sent away from here without some special treatment which eliminates a large percentage of the moisture contained in them, when harvested naturally in our temperate climate. To overcome this difficulty, we have for many years not only subjected this class of seeds to a special drying process, but enclosed each packet in tinfoil, and this again is placed in a hermetically-sealed covering, from which the air is exhausted." Mr. J. W. T. DUVEL, of Washington, U.S.A., wrote (p. 163):—"Carefully conducted experiments have given results which are diametrically opposed to those set forth by Mr. WATSON." Mr. H. R. WHITELAW (p. 171) attributed the failure of a collection of seeds sent from England to the Transvaal to their having been packed "as if they were only to go a few miles."

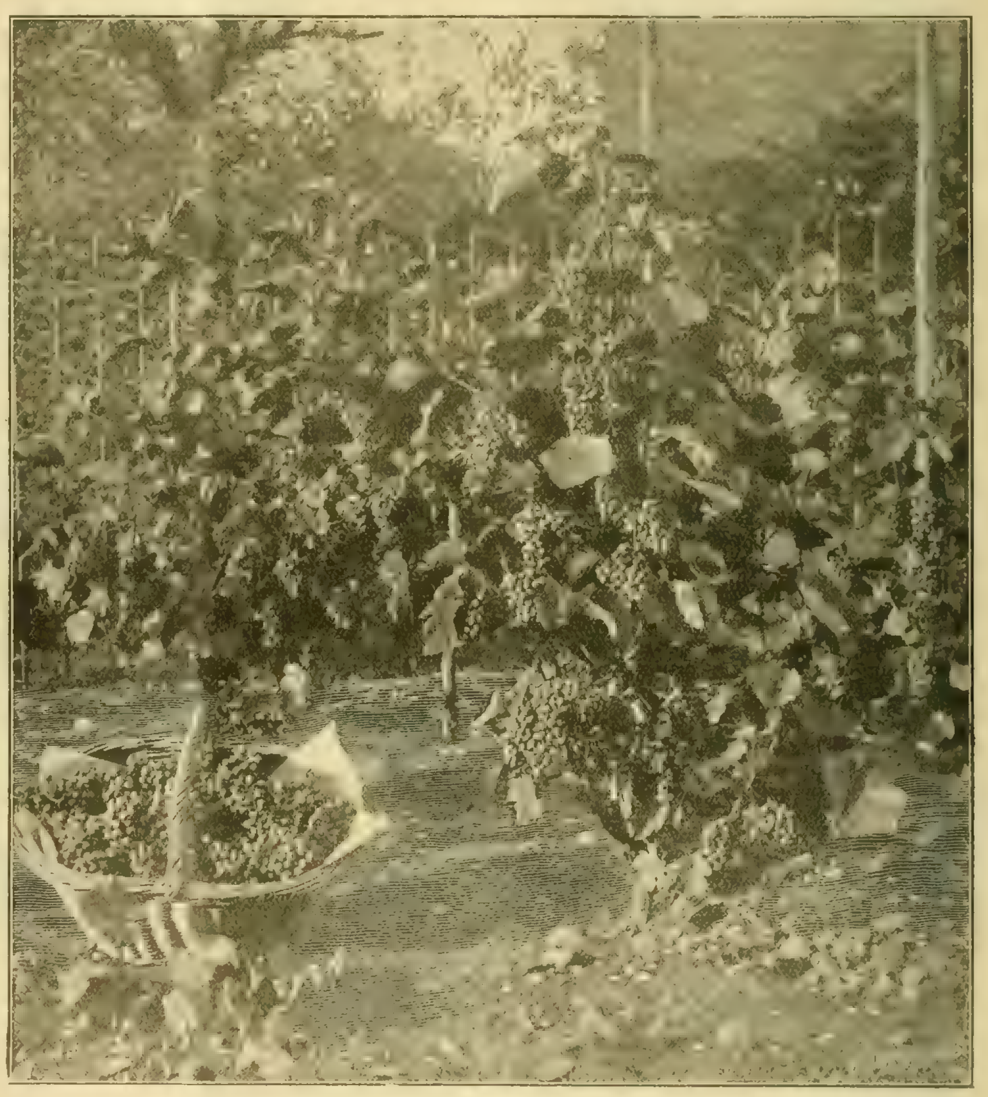

FIG. 14.—THE OUT-DOOR VINES IN THE COUNTY EXPERIMENTAL GARDEN, AT DROITWICH, WORCESTERSHIRE.

I have also received protests from others, including seed dealers, who accused me of a desire to injure the seed trade between this country and the tropics! My feeling in the matter has always been that if this special treatment and expensive packing were necessary in the case of seeds supplied by dealers, then the thousands of packets of seeds of all kinds sent from Kew should have failed to grow in consequence of our packing them in the manner recommended above. But reports were always to the contrary effect. For years we have made a practice of sending to some tropical garden all the flower seeds left from our annual sowing, the bulk of them having been obtained from British and Continental dealers, and they have invariably given satisfaction to their recipients. There can be no question of the success of the seeds received at Kew from all parts of the world when they are packed in a common sense way; failure is generally in those cases where sealed tins or bottles have been used.

Mr. WILSON, Messrs. J. VEITCH & SONS' collector in China, had really wonderful success with the seeds he brought and sent home, they numbered some thousands of packets; and he informs me that he employed the Kew methods, with which he was quite familiar, having had charge of our tropical seed department for about a year.

As I was unable to speak from actual experience as to the requirements of vegetable seeds sent from this country to the tropics, I decided to test some, and, therefore, with the permission of the director, I obtained from Messrs. SUTTON & SONS a collection of vegetable seeds as supplied for sowing in this country, divided each packet into three lots, placed each lot in an ordinary paper packet, and packed each set of 43 packets in a thin wooden box. Each set contained seeds of Bean, Beetroot, Broccoli, Brussels Sprouts, Cabbage, Carrot, Cauliflower, Celery, Cress, Cucumber, Endive, Kale, Leek, Lettuce, Marjoram, Mustard, Parsnip, Parsley, Pea, Onion, Radish, Spinach, Tomato, Turnip, and Vegetable Marrow. The three sets were then forwarded by parcel post on April 11, 1905, to the following:—

Mr. W. N. SANDS, Curator, Botanic Garden, St. Vincent, West Indies; Mr. F. S. Sillitoe, Superintendent, Palace Gardens, Khartoum, Soudan; Mr. J. W. Campbell, Superintendent, Government Gardens, Taiping, Perak, Federated Malay States.

To each of these I sent a copy of the following note:—

"Dear Sir,—You may have seen in the *Gardeners' Chronicle* recently some notes by me and others on the best methods of preparing and packing seeds for transport to tropical countries. Some authorities consider it necessary to prepare the seeds by a special drying process, wrap them in tinfoil, and pack them in hermetically-sealed tins, from which the air is exhausted, to preserve them from the effects of heat and moisture during the journey. As you are aware, we do not treat seeds distributed from Kew in this way, and I believe our seeds travel well. But it has been stated that seeds of English garden vegetables would not survive our treatment. To test this I am sending you a collection of 43 packets of seeds purchased for the purpose, and I shall be greatly obliged if you will carefully note the behaviour of each kind after sowing, and report the results to me. —Yours, etc., W. Watson."

In selecting these three stations, the aim was to get as diverse conditions as possible. Perak is in the Malay Peninsula, and is distant nearly a month's journey through the tropics, including the passage through the Red Sea, whilst the conditions of the Government garden at Taiping are extremely moist, and, therefore, trying for seeds of temperate plants. Khartoum, on the other hand, is extremely hot and dry, and gardening is, according to Mr. Sillitoe, very difficult. The West Indian test would apply to most countries in the Western Hemisphere.

No report has yet been received from Mr. Sands, of St. Vincent, but he wrote on May 5:—"The box containing 43 packets of vegetable seeds arrived safely on April 25, and I shall have much pleasure in carrying out your wishes. I intend dividing each packet into several lots and testing the germinating power at intervals. I obtain the greater part of the seeds required for the department here from the United States, so that I have no previous notes to give you, but will supply full details of the behaviour of this lot later on."

Mr. Sillitoe wrote from Khartoum on November 25 as follows:—"The box of vegetable seeds arrived here in May, after I had left for England. It, therefore, had to await my return in August, but that being one of our hottest months nothing was sown till September, and the majority not till October. The last sown were the Peas on November 17. They are now looking very promising. Peas, as a rule, are not a success here; they make plenty of growth but little flower. I suppose the seeds sent to me have experienced the hottest time of any that have been sent from England. With the exception of three or four small storms, we have had no rain for five months, and a daily average maximum shade temperature of nearly 100° F., the highest maximum being 112° F. At the time of writing, 4 p.m., it is 95° in my verandah. The maximum daily shade temperature in September was 100°-105° F. and the minimum 80°-85° F. at night. The seeds sown then were Lettuce, Endive, Cabbage, Cauliflower, Tomato, and Onion. They all germinated well in two or three days. Those sown later were Beans, Carrot, Cucumber, Radish, Turnip, Marrow, and Spinach. These also germinated well in a few days. The only failure in the whole collection was Celery, which often fails here; in fact, the only Celery seed that has grown is some I obtained from Cairo. This season I have had seeds from most of the leading English dealers, packed either in hermetically-sealed tin boxes or wrapped in tinfoil, but in my opinion all this extra care is unnecessary for seeds coming to a dry climate like this, although it may be advisable for a wet one. If large seeds, as Peas and Beans, are not absolutely dry when packed in air tight tins, the moisture from them causes all the smaller seeds in the tin with them to mould. This has occurred with several collections that I have received, but it would not happen if a plain wooden box were used."

Mr. Campbell wrote from Taiping, Perak, on July 14:—"The seeds were received in good condition on May 12, and were sown the following day. With the exception of Parsnips, everything germinated splendidly. Peas were all up in seven days, and American Wonder Pea was ready for table in six weeks. Broad Beans, Carrots, and Turnips were up in eight days; Radish, Cabbage, Spinach, Lettuce, and Endive in six days; Mustard and Cress in two days. All the crops promise well, except Spinach; this germinated well but grew badly, owing to the heavy rain we had at that time. Parsnips always germinate badly here. I have twice before sown Parsnip seeds that have been specially dried, but they failed to germinate. This garden is at an elevation of 3,400 feet; the average night temperature is 63°, day temperature in shade 78°; average rainfall about 185 inches per annum. The actual rainfall for May, the month the seeds were sown, was 21.83 inches, there being only nine dry days in the month. The question of seed packing is important. If you can succeed in proving that seeds can be sent safely from England to the tropics without special drying, airtight cases, etc., it will make a considerable difference in their cost." *W. Watson, Kew.*

MANURES FOR APPLES.

We extract the following particulars relating to the use of artificial manures from a letter contributed to the *Daily Graphic* by a correspondent. They may be compared with interest with the results obtained at Woburn, where the results from the use of artificial manures were found much less favourable.

The experiments were carried out in Germany with a large orchard of King of the Pippins Apple, five long rows of which received different manurial treatment. One row was left untreated, while the four others had different manurial combinations. The row left unmanured yielded 104 lbs. of Apples per tree during the five years reported on by Dr. Wagner, and in the fifth year (1904), which was the year of maximum yield for the entire orchard, the weight of the Apples per tree was 55 lbs., and the number 294.

The best results from manuring were obtained by the use of a complete mixture consisting of 1½ lbs. of sulphate of ammonia, 1½ lbs. of muriate of potash, and 3½ lbs. of basic slag, applied to the roots during the winter. During the five years the yield per tree from this dressing was 163 lbs. of Apples, while by the fifth year the crop had increased to 401 Apples, weighing 105 lbs. per tree. That is, the weight of Apples per tree was increased by this plan of manuring from 56 lbs. per tree on the unmanured trees to 105 lbs. per tree on the manured trees, or 90.9 per cent., while the number of Apples per tree was increased from 294 to 401, or 36 per cent. The increase in the average size of the Apples is, perhaps, as remarkable as any feature in these experiments. Those from the unmanured trees averaged 2.98 ounces each, and those from the manured trees 4.19 ounces each—an increase in the average size of the Apples of over 40 per cent.

The trees were planted in 1891, eight yards apart in every direction. Up to 1896, the soil under and between the trees was used for Raspberries, Gooseberries, and Currants; in 1897 the land was fallowed; in 1898 and 1899 Early Potatos were grown; in 1900 a mixture of Peas, Beans, Vetches and Oats were grown and cut green; in 1901 Early Potatos were again grown; while in the autumn of that year the orchard was sown to grass, in which it has remained ever since. The lessons of the manurial experiments are that Apple and Pear trees require as plant-food the same fertilising ingredients, whatever the variety. They need nitrogen, phosphoric acid, and potash, and the quantities to be applied depend less on the variety than upon the nature of the soil and the age of the trees.

If the orchard is a large one, and closely planted, the most convenient method of manuring the fruit-trees is to apply the quantity of manure per acre. For fruit-trees on a medium soil in fair condition, about 3 cwt. of nitrate of soda (or 2½ cwt. of sulphate of ammonia), 3 cwt. of muriate of potash, and 7 cwt. to 10 cwt. of basic slag per acre per annum give the best results. For smaller orchards or gardens the quantities used per square yard per annum would be 1 ounce of nitrate of soda (or 1 ounce of sulphate of ammonia), 1 ounce of muriate of potash, and 2½ ounces of basic slag. If the soil is a heavy clay, the quantity of basic slag may be increased to 3 ounces per square yard, and the quantity of muriate of potash reduced to three-quarters of an ounce. On lighter soils, the muriate of potash might be increased to, say, 1¼ ounces. As to the application of the manures, the muriate of potash and basic slag are mixed together, but only just before using, and broadcasted in the autumn or early winter.

If the orchard is under grass the muriate of potash and basic slag are best applied in November or early December, and, if possible, harrowed in. If, however, the soil under the trees is grown with other crops which require a tillage of the soil, then the application of these two manures may be made up to the end of January. As soon as the sap begins to rise in the fruit-trees (in February or early March) the nitrate of soda (or sulphate of ammonia) should be given as a top dressing. If it is intended to manure the trees singly it must not be forgotten that the root system extends over a larger area than that covered by the overhead branches. The area dressed should be not only that covered by the branches of the tree, but also two yards in addition all round. Although it is often recommended to dig a pit or hole round the tree, and to put the manure into this, so as to get it into immediate contact with the roots, a good many recent investigations show that it is not necessary. Some American experiments even show that it is injurious. All that is necessary is to broadcast the manure over the surface, and then either harrow it in or stir the soil lightly with a rake or spade.

It is worth noting that a report has come to hand from the United States Department of Agriculture on small fruit and orchard cultivation in that country, and in this is a strong recommendation to use artificial manures, and not farmyard or stable dung, for such orchards or fruit plantations. The reason given is that dung has been found to be a frequent carrier of noxious weed seeds, and that orchards and small fruit plantations are kept more free of these and cost less for cleaning cultivations when artificials are employed. The dressings recommended, and based on an enormous number of American experiments, are almost identical with those which Dr. Wagner has found so successful in Germany.

NURSERY NOTES.

MR. P. LADDS, SWANLEY.

This well-known market-nursery contains upwards of 100 glasshouses, almost all of which have a length of 200 feet. The object of my visit was to view the Chrysanthemums, and to observe the treatment they receive, enabling Mr. Ladds to produce such beautiful blooms as he has exhibited in such good style on several recent occasions. Although the major portion of these flowers were over, sufficient remained for my purpose. I found some are grown in outside beds, and later in the season replanted in the large Vineries. Others are grown entirely in pots and finally flowered in 24's (8 inch). No exceptional treatment is accorded to the plants, but they are never allowed to suffer from want of attention. A number of shoots are grown on each plant, but one flower only is allowed to develop on each break. On some plants I counted from 8 to 10 blooms. Some of the more noticeable varieties included Nagoya (a large batch of this variety made a brilliant show), Winter Koenigin, an incurved Japanese flower of a pretty shade of blush-pink; Mdme. Paolo Radaelli, Mdme. P. Rivoire (white), Lady Roberts (the flowers of this variety were almost over, but it is worthy of note), White Major Bonnaffon, a very late white variety, in condition in January; W. H. Lincoln, Lord Hopetoun, and Princess Victoria. It may be of interest to note that the first flowers for market were cut on July 18th, and that a regular supply has been consigned to Covent Garden each day the flower market has been open, and this will continue until well into the present month, making a continuous supply for a period of almost six months of the year. The first blooms sold readily at 3s. per dozen, and growers such as Mr. Ladds, who start early and maintain a regular supply, are enabled to rely upon constant customers and to make profitable prices.

Among subjects of interest other than Chrysanthemums were several houses filled with large bushy plants of Genistas. Some of the plants were already starting into growth, and looked promising for a profusion of bloom. Callas are also extensively grown, as is also Asparagus medioloides, the long trails of the latter being trained on thin string. The "Smilax" is grown in rows in boxes with just sufficient room between to permit of their being cut. Asparagus plumosus nanus filled several houses. This is grown in pots, and thread is used for training the growths. Asparagus Sprengeri is also extensively grown in pots. The pots are suspended from the roofs of the plant houses. Zonal Pelargoniums receive special attention, being grown for the spring-trade. Thousands were already in 48 size pots. About 50 sorts are grown, but the bulk consists of a limited number of these. Snowdrop is the favourite white variety grown. Paul Crampell (deep scarlet), Hall Caine (light red), and Henry Jacoby is always in demand. King of Denmark still takes the lead as a salmon-coloured variety; but Mrs. Lawrence is also becoming a favourite with buyers. Raspail is not yet surpassed for quality. Ville de Poitiers (light scarlet), Constance (an old pink variety still grown extensively), Mrs. R. Cannell (single salmon), are other notable varieties. The Zonal Pelargoniums are marketed in well-flowered plants suitable for furnishing window boxes and for decoration. Ivy-leaved Pelargoniums are also extensively grown, and while a few new sorts are tried the stock consists mainly of Chas. Turner, Galilee, and Madame Crousse. Large batches of Marguerites were seen in various stages of growth. Verbena Miss Willmott receives attention. Mr. Ladds was the first grower in the market with this flower last spring, and the first plants for next spring are already in pots, while in the propagating house large batches of cuttings of this variety were seen. Here, too, I noticed a large batch of Roses, chiefly of the newer sorts, including Lady Gay, and Richmond, a new variety of the Liberty type. Genista cuttings are here treated differently to those I have grown or seen elsewhere. They are rooted in pots suspended from the roof. The pots are filled to within an inch or so of their tops, and the cuttings being almost below the rims do not dry from the heat below.

In the Chrysanthemum department I found propagating well advanced for next year's supply. The culture of Ferns forms an important feature, and it was interesting to note from the sown spores upwards through the various stages of growth they were all in good order, and promised well for a regular succession. The more useful market sorts only are grown, but these are well grown, and nothing in the way of starved or stunted stock was seen.

I may conclude by adding that during the last few years the nursery has been under the control of Mr. F. W. Ladds (the youngest son of the late P. Ladds), who manages it for his mother, and much credit is due to him for the great improvement that has been made during his stewardship. *A. Hemsley, December.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Calanthes.—Many of the deciduous Calanthes of the C. vestita section which commenced to bloom in November have now passed out of flower, and it will be necessary that the pseudo-bulbs should have a short season of rest, during which water must be withheld from them. The plants should be placed on a shelf in a position that is free from drip or damp, and close up to the roof glass, where the full sunlight will reach them and cause them to become thoroughly matured and hardened. Keep the plants in an atmospheric temperature of about 60°, and do not permit white or brown scale insects to infest the pseudo-bulbs, or they will injure the dormant "breaks." Another good plan is to turn the plants out of their pots, shake away the soil, etc., and lay the pseudo-bulbs in a slanting position in open shallow boxes, keeping the face or front of each pseudo-bulb towards the light. By this method they require very little room, and can be easily examined and cleansed of insect pests. Calanthes of the C. Regnierii section which flower in the spring have their flower spikes well advanced at the present time, and only a moderate amount of water is needed at the root till the flowers have expanded, when water should be gradually withheld. When the first flowers open the plants may be removed from the East Indian house to the Cattleya house, and if the atmosphere be kept moderately dry the flowers will fade less quickly after being cut than they would if left in the warmer temperature.

Catasetums, Cycnoches, and Mormodes.—Amongst other Orchids that require a decided rest are the Catasetums, Cycnoches, and Mormodes. The majority of these plants are now fast losing their leaves, and as they turn yellow and fall off the plants should be kept quite dry at the roots. Badly ripened growths will probably require water occasionally in order to preserve them in a plump condition, but pseudo-bulbs that have been properly matured will keep fresh-looking and plump all through the resting period without needing any water. Suspend the plants close up to the roof in the East Indian house in full light. If these Catasetums and Cycnoches are rested in this house they retain their roots much longer than if placed in a cooler temperature, consequently the pseudo-bulbs remain plump for a greater length of time than those whose roots die prematurely. The Mormodes prefer a light position in the Cattleya house while at rest. Where a collection of these curious and interesting plants is grown some of the specimens will have been in flower for several months past. Even at the present time the following varieties are in bloom at Burford:—Catasetum splendens aureum, C. s. punctatissimum, C. fimbriatum, C. galeritum pachyglossum, C. Bungerothii, C. albo-roseum, C. discolor, C. labiatum, C. macrocarpum, C. intergerrimum, C. bidentatum, and C. ferox; also Mormodes buccinator Rolfei, and M. Warscewiczii.

Odontoglossums such as O. læve, O. Reichenheimii, and O. citrosmum have completed their growth. The two first named species should be afforded a sufficient quantity of water only to keep the roots alive and the pseudo-bulbs plump, but O. citrosmum requires a long dry rest; owing to the absence of moisture the pseudo-bulbs will shrivel considerably, but this will not affect the health of the plants, as they will readily plump again to their normal condition when the flowering season arrives. The best position for these Mexican Odontoglossums while at rest is one near to the roof glass of the Mexican house.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to F. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Stove and Greenhouse Climbers in Borders.—If these have not been already pruned or thinned out, all weak and worthless shoots should now be removed, retaining only those which are most vigorous and thoroughly ripened; few rather than many will afford best results. Afterwards see that the shoots to be retained are thoroughly cleansed from insects by sponging or washing before replacing them in their respective positions. Examine the roots and remove any spent soil, afterwards top dressing with a compost suitable for the particular species of plant.

Lilium longiflorum.—Plants which were potted in autumn should now have an abundance of roots, and therefore with safety could be placed in an atmospheric temperature of 55° to 60°. It is a mistake to over-force these plants in their early stages of growth. Spray the plants lightly overhead, and be watchful for green-fly, which, if permitted, would establish itself very early in the young growths. Spray once a week with a weak solution of soft soap, adding about a teaspoonful of the XL-All Insecticide. This is an excellent remedy, but fumigation with XL-All I have found to be dangerous while the plants are so young, though it can be applied with good effect when they are approaching to the flowering stage.

Begonia Gloire de Lorraine.—Plants which have been flowering for some time in an intermediate house should now have their old flowering growths shortened to half their length, and be removed to an atmospheric temperature of 55°, keeping the roots rather sparingly supplied with water until young suckers are seen coming from the base, when the remaining portion of the old flowering stems may be further shortened. Before cutting away the old stems, some of the best leaves can be taken for the purpose of propagation, if desirable, and inserted in pans or boxes in soil of a light, sandy nature. Afford them a temperature of 65° to 70°, and do not keep the atmosphere very close; otherwise damping will take place. About two inches of stem should be taken with each leaf, and these when well rooted will produce very strong plants. I prefer plants which have been raised from leaves, inasmuch as they are not so persistent in flowering in the growing season, and they have a more robust habit. It is most important to get a good batch of plants early in the season.

Caladiums.—A batch of these should now be started. The varieties of C. minus erubescens and C. argyrites are most useful in furnishing the front of stages, and if hardened a little are found useful in many forms of decoration. If placed in a moist atmosphere at a temperature of 70°, the young growths will soon appear, when the plants may be shaken out of the old soil and re-potted, first warming the new soil, which should consist of good loam, peat, and leaf mould in equal parts, with some sand and finely broken crocks to keep the compost open. Afford plenty of water to the roots as growth increases.

Sowing Seeds.—Flower seeds should be ordered at once, so as to have them for sowing immediately. Gloxineas, Begonias, and Streptocarpus, raised from early sowings, are always found useful in the autumn.

Salvias.—Those plants which are indispensable, and which have finished flowering, should now be pruned back and induced to break into growth again for the purpose of providing sufficient clean cuttings.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Vines in Pots.—In most large establishments grapes are required as early in the season as possible, and for this reason pot vines have to be cultivated. Those which were started in November will be in various stages of growth at the present time. Continue to syringe them when the weather is favourable until their growths are about two inches in length, each morning and again early in the afternoon so that they may become dry again before night. The atmospheric temperature of the house should be increased by about 5° at night, and 10° by day, admitting just a little air for an hour or two in the day when the weather is mild. This will strengthen the shoots very much, but it is necessary to prevent cold draughts at all times. The rooting medium should be examined carefully twice each day and water afforded as soon as it is necessary, for if the roots become too dry they will certainly suffer a check. Afford soft water which has been warmed to the same temperature as that of the atmosphere in the house, and use similar water also for syringing purposes.

At the flowering period the atmosphere of the houses should be kept a little drier, and the temperature at night be maintained as near as possible at 65°. That good old grape Black Hambro is the gardener's favourite for forcing purposes, and it is generally a free setter; at the same time, it is wise to give the rods a tap each day when the flowers are open to aid in distributing the pollen. When the roots are seen growing near to the top of the pots apply a moderate top-dressing with good turfy loam, a little guano and finely broken oyster shells. The rods should be trained at about 18 inches from the roof glass, and the laterals be tied down gradually when they have made considerable growth, for if brought down too soon they are apt to snap off at the base. The laterals will require to be stopped at the first and second joint beyond the bunch of fruit, and the sublaterals will need almost daily attention. When the conditions of the weather are unfavourable to syringing let the paths and stages be damped down instead.

Early Permanent Vinery.—This house should be started, commencing with a temperature at night of 48° to 50°, and 53° to 55° on dull sunless days. Syringe the rods twice each day on favourable occasions. Examine the border, and if the soil appears to be at all dry, afford a copious application of tepid water to thoroughly moisten the border through its entire depth.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Pruning.—Continue the work of pruning as fast as possible in good weather. All Plum trees will be the better for being pruned at once. Trees growing against sheltered walls may be done in rough weather, and those in the open during the warmest part of the day. By a little skilful management in this way much of the work of pruning can be done quite comfortably, and if it is carried out in this manner it will be done more efficiently. When pruning Plum trees, do not hesitate to thin out the spurs, as overcrowding is one of the worst evils in fruit culture; but if the trees were carefully pruned and regulated during summer, they will not require much pruning at the present time. Keep the spurs cut well back, and if these have already become too long, let every alternate one be pruned severely, when, if the trees are healthy, they will afterwards break into growth in due course.

Tieing or Nailing.—Train the long shoots straight from the base to the apex, and when tieing or nailing be careful to leave sufficient room for the expansion of the shoots. The main branches should be tied with soft-tarred string, and the more slender branches with good matting, or be nailed with small narrow shreds as the case may be. Regulate the main branches, so that they will be an equal distance apart all over the tree. Fan training is perhaps the best system to adopt for this fruit tree.

Training Pear Trees.—Pear trees are grown in various forms, including cordons, and fan-shaped and horizontal trained specimens. Cordons can be employed where quick fruiting trees are required, and if good strong trees are planted, some returns should be obtained in the second season. If a wall or fence be less than 9 feet in height, train the cordon obliquely, as by so doing a greater length of rod will be secured. For fences of greater height, cordons may be trained in a vertical position. In tieing or nailing these, use the same methods as advised for Plum trees.

Fan-shaped Trees.—One of the advantages of fan training is that by this system the upper portion of the wall is more quickly covered. This method is also suitable for the covering of gable ends of buildings. The branches should not be placed closer together than 9 to 12 inches, and the middle or centre shoot should be vertical, while those at the base should be nearly horizontal.

The Horizontal System.—The branches of the tree to be trained in this style should be not less than three courses of bricks apart—better, rather, if four be allowed, and the first branches should be 15 inches from the ground level. Great care is necessary in pruning for the first two or three years, especially when pinching the shoots in the early summer.

Fruit Room.—Keep this structure well ventilated and clean, and the atmosphere as dry as possible. Examine the fruit carefully very frequently, as at this season many varieties are at the point of decay. All damaged and decaying specimens should be promptly removed.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Peas.—While it is too early to recommend sowing this crop outside, the present is a good time to make a large sowing indoors. Four-inch pots are the most useful for the purpose, using soil that has been stored for some time, or a very suitable compost would be that obtained from shaking out old Chrysanthemum "stools." Dibble 6 or 8 seeds deeply in each pot, and if the soil is in a moist condition at the time of sowing, no water should be afforded until germination has taken place. A cold frame will suit well if the plants are intended for planting outside, but a slightly warmer atmosphere should be afforded if they are intended to perfect a crop indoors. Dwarf growing varieties are the most suitable for this purpose, Chelsea Gem and Sutton's Green Gem being two of the best. As a successional batch use Early Giant, which is a large podded marrowfat Pea of medium height.

Cauliflowers.—Young seedling plants of these will soon grow apace, but it is an easy matter to ruin them by "coddling." Admit plenty of air to the frame when the weather is suitable. Sow a small quantity of seeds once a fortnight, and this will ensure a continuous supply. Select the small varieties, of which Magnum Bonum is a splendid type. Plants raised in the autumn, and stored in frames, will require care. Avoid keeping them in a close atmosphere, as mildew would then soon make its appearance and destroy the plants. Be careful also lest the plants should become dry at the root, and premature flowering ensue.

Potatos.—The forcing of this crop must now be taken in hand, if it is not in hand already. Good crops can be had from pot culture where frame room is scarce, but frame culture occasions the least trouble, and affords the greatest return if the room can be spared. The keynote to success is the use of well-sprouted tubers that have been carefully prepared for the purpose. Well-rotted leaf mould placed on a hotbed to the depth of 12 inches, together with some light soil sifted from the refuse of the potting bench, are all that is necessary for the tubers. Plant them in the ordinary way, but afford them plenty of room, as more often than not the growth becomes drawn through overcrowding, and a poor crop is the result. Sharpe's Victor and Ringleader are two of the best varieties for cultivation, either in frames or pots. Give attention to the tubers intended for the main crop by exposing them to the light to enable their sprouts to become consolidated gradually. Keep these as cool as possible, without permitting frost to reach them.

Broad Beans.—Make a sowing of these on an early border out of doors, but the main sowing should be made next month. Rich soil, which has been deeply worked, is best for Beans. The Longpod varieties mature as early as broad Windsors, but the latter afford the greatest return as an early crop. A great advance has lately been made in fixing a green-seeded type. To secure an early crop of this vegetable, seeds should now be sown in a few boxes, with a view to transplanting the seedlings into frames. The Beans may be expected to be in a condition for consumption towards the end of the month of May.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

The Formal Garden.—As mentioned last week, the present is the proper time (in view of preparing the stock of the different plants required) to decide upon the summer arrangements of the beds in the flower garden The following are a few simple arrangements which occur to me, and which could be easily adapted to suit many styles of bedding. Blue Agapanthus and Salvia patens, mixed with a groundwork of Sutton's compact azure Lobelia, is very suitable for a narrow border. A striking picture could be made in a design by planting representative beds of Mrs. Pollock or Mrs. Cox, or Flower of Spring Pelargonium, Coleus verschaffeltii, and Iresine Lindeni. A design composed of a circular bed in centre, with eight plainly shaped beds—four small beds and four larger ones—surrounding it, could be prettily bedded for autumn effect by arranging it thus:—In the centre bed Nicotiana sylvestris (white); in the two small beds on opposite sides of the design, that very early-flowering dwarf Dahlia named Sunset (red); in the other two small beds, Calceolaria amplexicaulis (yellow). Two of the larger beds could be planted with Aster Amellus (mauve), and the remaining two with the Chinese Aster, Callistephus hortensis (mauve). Very effective and pleasing combinations in colour can be had by planting beds with the following in mixture. Flower of Spring Pelargonium and Perilla nankinensis; Henry Jacoby Pelargonium and Calceolaria amplexicaulis; Lady Plymouth Pelargonium and any free flowering, blue variety of Viola; Perilla nankinensis and a dwarf flowering variety of Canna; Heliotrope and a pink flowered Pelargonium or a pink flowered Petunia, similar to the variety Lord Courtenay; Blue Lobelia, and the ordinary red Virginian Stock—the latter to be sown after the Lobelia is planted.

Carpet bedding.—The principal thing to avoid is the perpetuation of duplicated designs. If it is desirable in certain positions to have beds in juxta-position to balance and harmonise, it can be done by a judicious employment of colours, without the need of repeating the same arrangement again and again. A free use should be made of the softer coloured plants at one's disposal, in order that the stronger colours shall not predominate. As "carpet bedding" is too complicated to attempt to describe without the help of a plan, it may suffice to enumerate some of the best plants in their colours suitable to this system of bedding. *Blue.*—Compact growing Lobelia of the pumila section, and Kleinia repens. *Yellow.*—Pyrethrum aureum, Alternanthera paronychioides aurea, Lysimachia nummularia aurea, Mesembryanthemum cordifolium variegatum, and Sedum Lydium. *Glaucous.*—Cotyledon secunda glauca, Sedum glaucum, Sempervum calcareum. *Crimson.*—Coleus Verschaffeltii, Amaranthus ruber, Iresine Lindenii, and I. Herbestii. *Orange red.*—Alternanthera paronychioids, A. p. major and A. amabilis. *White.*—Antennaria tomentosa, Santolina inana, Cineraria maritima, C. compacta, and Stachys lanata. *Carmine.*—Alternanthera amœna and A. magnifica. *Green.*—Mentha pulegium, Herniaria glabra, Tagetes signata, Sedum acre, and Sempervivum montanum.

Propagation.—Now is a good time to prepare for propagation by cuttings and seed sowing. A large quantity of light soil, with plenty of leaf mould might be sifted and placed under cover to keep it dry, and ready for use. The soil—especially the leaf mould—usually contains so much undesirable living matter, that a capital plan is to heat it, previous to storing, so as to destroy insect life and seeds. With a sheet of iron, a grating, and a few bricks, a suitable heating arrangement can easily be improvised for this purpose in any open position. Boxes, pans, and pots should be prepared and methodically arranged ready to hand. If hot beds are to be used, and are not already made, a quantity of fermenting material such as leaves, and long stable litter must be collected, and well mixed together prior to the erection of a frame. Where there is a well-heated pit or a propagating house, this is not necessary. Cuttings of such plants as Alternanthera, Iresine, named varieties of Lobelia, Tropæolum, Heliotrope, Calceolaria, Ageratum, and Pelargonium can now be made. With the exception of the Pelargonium, the best method is to insert a number of cuttings of the above-named plants, plunging them in a frame in the propagating house in a bottom heat of 75°. After affording water, let the frame be shaded during sunshine, keeping the structure closed for about a week. If Alternanthera, Iresine, and Lobelia are required in large quantities it is preferable to make a bed of soil three or four inches in depth on the hot-bed, in which to insert the cuttings. Pelargonium cuttings succeed better if inserted singly in small pots, because when subsequently shifted into pots of a larger size they suffer no check, and when required for planting out are consequently almost equal to plants that were propagated in the previous autumn.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Jan. 13	Dutch Gardeners' Society meet at Richmond, Surrey.
MONDAY	Jan. 15	Lecture at Surveyors' Institute.
WEDNESDAY,	Jan. 17	Annual Meeting Brixton, Streatham and Clapham Horticultural Society.
THURSDAY,	Jan. 18	Annual Meeting and Election of Pensioners of the Gardeners' Royal Benevolent Institution at Simpson's Restaurant, 101, Strand, London, W.C. 2.45 p.m. Linnean Society meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—36·7°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, Jan.* 10 (6 P.M.): Max. 46°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Jan.* 11 (10 A.M.): Bar., 30·3; Temp., 39°; *Weather*—Fair and bright.

PROVINCES.—*Wednesday, Jan.* 10 (5 P.M.): Max. 45° Isle of Wight; Min. 39° E. Coast of Scotland.

SALES.

MONDAY NEXT—
1,500 Roses, Herbaceous and Hardy Plants, Liliums, Gladiolus, Azaleas and Rhododendrons, Border Plants, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
Sale of Roses, Shrubs, Lilies, &c., at Stevens' Rooms, King Street, Covent Garden.

WEDNESDAY NEXT—
Hardy Border Plants and Bulbs, Herbaceous Plants, Lilies, Begonias, Gladiolus, Carnations, &c., at 12. 3,000 Standard and ½ Standard, Dwarf and other Roses at 1 and 3. Palms and Plants, Azaleas, Rhododendrons, Aspidistras, &c., at 5. By Protheroe & Morris, at 67 and 68, Cheapside, E.C.

WEDNESDAY NEXT—
Cases Japanese Liliums, &c., also Lily-of-the-Valley, Spiræas, Gladiolus, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 3.

FRIDAY NEXT—
Imported and Established Orchids, variety, also choice Hybrids, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

The Chinese Flora.

The last part of the "Enumeration of all the plants known from China proper" and neighbouring countries has been issued lately by the Linnean Society, together with a "List of the genera and species discovered in China since the publication of the various parts of the Enumeration," from 1886 to March, 1904.

This undertaking has been on hand for nearly twenty years, the first part having been issued on May 20, 1886. The Enumeration occupies the whole of Vol. 23 of the Journal of the Linnean Society (Botany), 1886-1888. Vol. 26, published at intervals between April 30, 1889, and October 21, 1902, was likewise devoted to it, and now the 36th volume, completing the undertaking, which has been in progress since 1903, is brought to an end The list of the names of additional genera and species, not included in the main body of the work, but published elsewhere, occupies no fewer than 79 pages. These additions are incorporated in the very complete index supplied to the present volume, so that botanists have now at their disposal a complete list of the Chinese Flora, so far as known up to March, 1904, together with detailed descriptions of the previously undescribed species. Mr. Wilson's later introductions collected for Messrs. James Veitch and Sons, are thus not included; indeed, many of them are not yet determined. If botanists have had to wait, they have got something which will go far towards compensating them for the delay they have been exposed to. In the "historical" note Sir W. T. Thiselton-Dyer gives, by way of preface, a brief note of the inception and progress of the work. Mr. F. Blackwell Forbes began the list and allowed the use of his collections and notes, but circumstances soon prevented him from co-operating in the preparation of the catalogue, which was continued by Mr. Hemsley, with the assistance of various members of the staff of the Kew herbarium and others. The index alone will be of extraordinary value. It contains some 17,000 entries, and is due to the indefatigable industry of Mr. Daydon Jackson, the general secretary of the Linnean Society. The wonderful richness of Dr. Henry's collections in Western and Central China induced Messrs. Veitch, of Chelsea, to despatch Mr. E. H. Wilson to make further botanical explorations, with a view of collecting and introducing some of the many valuable and beautiful plants not previously known in our gardens. Wilson made two journeys, one in 1899 and the second in 1903. The record of his journeyings is in course of publication in these columns, and has, as we learn from our correspondents, excited much attention even in far-off Queensland. Horticulturists have also profited largely by the numerous introductions made by him to the Veitchian nurseries, many of which have been shown at meetings of the Royal Horticultural Society, including the lovely Meconopsis, a whole series of Primulas, numerous ornamental trees, etc. Several have been described and figured in our columns, as will be seen from the record of novelties of the past year now in course of publication. There are, as we know, many more to come which will excite the interest of plant-lovers and refute the impression that the supply of "new plants" is practically exhausted, and that all that systematic botanists will have to do in the future will be to revise and co-ordinate the labours of the past. In particular, we may mention that many of the recent introductions, whether of herbaceous plants, of shrubs, or of trees, will be of great value to lovers of hardy plants and trees.

The present Enumeration contains, we are told, the names of some 8,271 species, of which 4,230 are endemic, or not known to occur outside the Chinese Empire. The most moderate estimates, therefore, show that the Chinese Flora consists of not fewer than 12,000 species. The nature of the flora of Japan and the Eastern Himalaya, Assam, Burma, and Siberia will thus eventually be made clearer. Much of the surface of the country has been denuded of its forests, but here and there, especially in the extreme east, Wilson encountered tracts of virgin forest teeming with new and interesting Conifers and other subjects. Some of these may even serve to connect the remains of the still existing flora with that revealed to us by the geologist and the student of fossil plants. The gardener and the lover of hardy plants will also, as we have said, profit largely by the discoveries and introductions of Henry and of Wilson, and will have cause to appreciate the intrepidity and diligence of the collectors, and the enterprise of Messrs. Veitch.

OUR SUPPLEMENTARY ILLUSTRATION.—PETREA VOLUBILIS is a very old inhabitant of our stoves, though rarely seen outside botanic establishments, in spite of the great beauty of its flowers. It is a twining shrub with opposite, leathery leaves and conspicuous violet or purple flowers arranged in rather dense pendulous racemes. The flowers are remarkable for their tubular calyx, the five lobes of which ultimately become greatly enlarged as growth goes on and assume a violet colour. The corolla is of a deeper purple, and looks like a violet surrounded by the paler sepals. The enlarged sepals are sometimes spoken of as an epicalyx, but that is due to a misapprehension. Our illustration was taken by Mr. WORTHINGTON SMITH from an unusually fine specimen grown in the garden of Sir TREVOR LAWRENCE, Bart., the President of the Royal Horticultural Society. Mr. SMITH also represents the unusually large pollen-grains or microspores. About the same time that this specimen was received we were favoured by Sir DANIEL MORRIS with two photographs of a white variety grown in the Newcastle Plantation, Barbados, under the name of the "White Wreath," where it forms a most attractive and beautiful object. One of these photographs is reproduced in fig. 15. The Palm-leaves are those of Sabal Palmetto. The fern is Nephrodium exaltatum. The plant requires the usual treatment bestowed on stove climbers, but a watch should be kept for mealy-bug.

MR. WILLIAM MARSHALL.—Mr. W. MARSHALL will shortly enter upon his twenty-first year as chairman of the Floral Committee of the Royal Horticultural Society. In order to celebrate this event, to show their esteem for Mr. MARSHALL, and their high appreciation of the honorary services he has rendered to horticulture, the members of the Floral Committee decided on Tuesday last to entertain him at dinner on a date which has yet to be fixed. A sub-committee was appointed, consisting of Messrs. H. B. MAY, GEORGE PAUL, J. F. MCLEOD, J. HUDSON, and GEORGE GORDON (secretary) to arrange details. It has been decided that the dinner shall take place at the Hotel Windsor, and that the price of tickets shall be six shillings each. Anyone wishing to be present at this interesting function may apply for particulars to the gentlemen named above. This compliment to Mr. MARSHALL has been thoroughly well deserved.

M. MASSART.—We learn from Brussels that M. J. MASSART has been appointed director of the Institute of Botany at Brussels founded by the late Prof. ERRERA, and that he has also succeeded him as Professor of Botany in the University. The "Ethological" collections in the Botanic Gardens, to which we have from time to time alluded, were under his charge, as also was the extremely novel and interesting botanic station in the sand hills at Coxyd in Flanders, to which we devoted an article in our volume for 1904, November 19, p. 345.

PÆONIA DELAVAYI LUTEA.—The *Revue Horticole* for January 1 consecrates a coloured plate and a description of the yellow-flowered Pæony, known in our gardens as P. lutea. According to the article in question we are, in future, to speak of it as a variety of P. Delavayi. This species was first found on [near] the glacier of Li Kiang, in Yunnan, at an altitude of 3,500 metres, by the Abbé DELAVAY. It now appears that the plant is very variable in the colour of the foliage and of the petals. Some of the variations are, in the article alluded to, described by M. M. LEMOINE, who further say that it blooms in the early part of June, thus succeeding the varieties of the Moutan Pæony, but flowering before the ordinary herbaceous Pæonies. Layering or grafting are recommended as the most successful means of propagation. Grafting is carried out in August under a bell glass.

Botanical Magazine.—The January number contains coloured illustrations and descriptions of the following plants:—

Asparagus Sprengeri, *Regel*, tab. 8,052.—A well-known species, which has also been called A. ternifolius. The berries are here figured. They are produced very freely, and are globular, of the size of a small pea, and of a rich crimson colour.

Cynorchis compacta, *Reichenbach*, tab. 8,053.—A terrestrial Orchid from Natal, with solitary ovate leaves and erect spikes of whitish flowers, the three-lobed lip being slightly purple-spotted, and with a short spur. Kew.

Oxalis adenophylla, *Gillies*, tab. 8,054.—A charming little species, with tuberous roots, tufted habit, palmately divided leaves, and rose-pink flowers. It is closely allied to O. enneaphylla. The plant was collected in Chile by Mr. Elwes, and by him presented to the Royal Gardens, Kew, where, for the present, it is grown in a cold frame, though doubtless it will prove as hardy as O. enneaphylla.

Colchicum crociflorum, *Regel*, tab. 8,055.—A very pretty but a very deceitful little plant, for in flower it has all the appearance of a Crocus, with pale perianth-segments, having a central purple stripe. The six stamens, however, suffice to reveal its lineage. It is a native of Turkestan, and flowered in the Alpine House at Kew. It was introduced from Kokan by Mr. C. G. van Tubergen, of Haarlem.

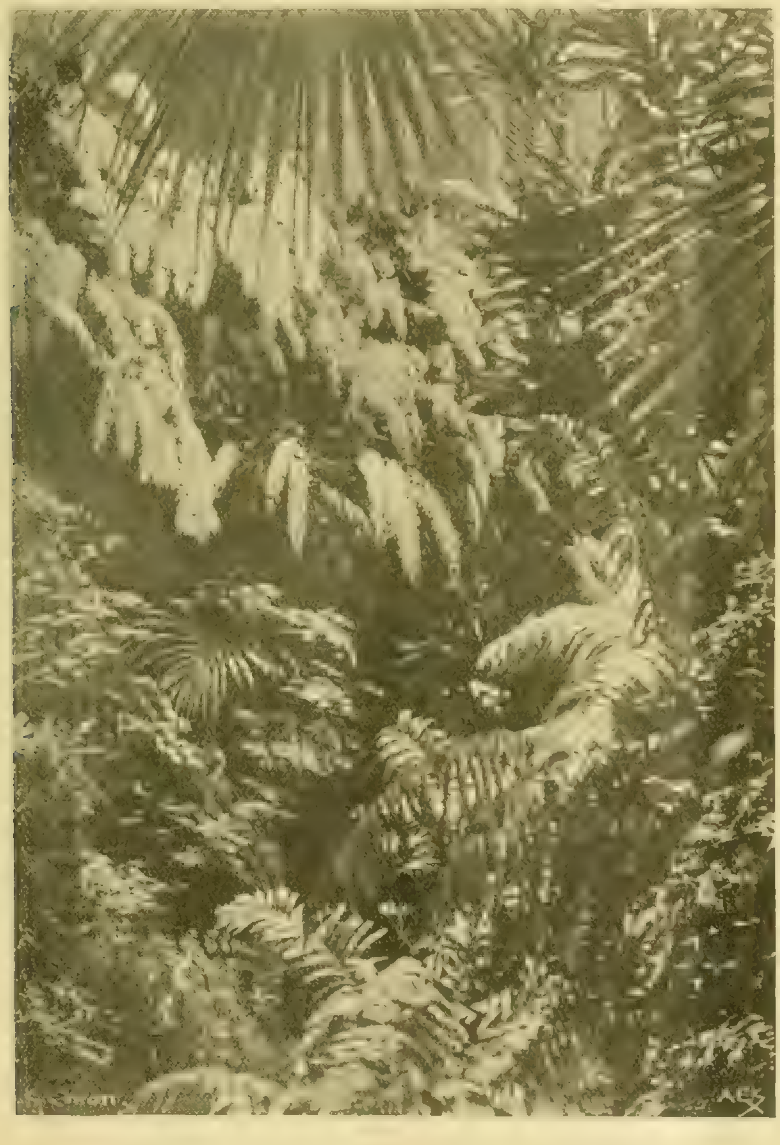

Fig. 15.—Petrea volubilis. white variety, flowering in Barbados.
(See also Supplementary Illustration and p. 24.

Wittmackia lingulata, *Mez*, tab. 8,056.—A West Indian Bromeliad, with broad, oblong, abruptly acute, finely and remotely serrulate leaves, and a loose, much-branched, many-flowered inflorescence, the individual flowers being whitish and relatively inconspicuous. The plant figured was grown in the Royal Botanic Gardens, Glasnevin.

A New Year Number.—We congratulate the *Gardeners' Magazine* on the bright and attractive New Year number which it offers to its readers. In addition to appropriate letterpress there is an abundance of pictures and a calendar inserted in a pretty coloured plate of Rambling Roses.

The Ghent Quinquennial.—A provisional programme for the Ghent Quinquennial to be held in 1908 has already been published. This exhibition is the sixty-ninth organised by the *Société Royale d'Agriculture et de Botanique de Gand*, and will be contemporary with the centenary of the foundation of the Society. The date proposed is from April 26th to May 3rd, 1908, and all exhibitors wishing to secure space for products which cannot be included under the sections as now arranged should make special application before June, 1906. The programme contains a preface by the president, the Comte de Kerchove de Denterghem, intimating that at the forthcoming exhibition an increased importance will be devoted to the higher branches of horticulture; to biology and other scientific aspects of the subject.

H. G. Moon.—The sixty-eighth volume of the *Garden* is dedicated to the memory of the late Henry George Moon, of whom a good portrait is given.

The Gardeners' Royal Benevolent Institution.—The Sixty-seventh Annual General Meeting of the members and subscribers of this institution will be held at "Simpson's," 101, Strand, London, on Thursday, January 18, 1906, at 2.45 p.m., for the purpose of receiving the Report of the Committee and the Accounts of the Institution (as audited) for the year 1905; electing Officers for the year 1906; and for the election of 18 pensioners on the funds. The chair will be taken by Harry J. Veitch, Esq., F.L.S., Treasurer and Chairman of Committee, at 2.45 o'clock. The poll will open at 3 o'clock, and close at 4 o'clock precisely, after which hour no voting papers can be received. The voting papers have been issued. Any subscriber not having received a copy should communicate with the Secretary, George J. Ingram, 175, Victoria Street, Westminster.

Jubilee of a Nursery Employee.—The completion by Mr. L. E. Thomas of 50 years' connection with Messrs. Lane & Sons, Berkhamsted Nurseries, was celebrated on Friday, January 5, by a dinner given by the firm at the King's Arms, Berkhamsted. A company of between 80 and 90 employees and a number of personal friends was present to testify to the general good feeling towards the guest of the evening.

Linnean Society.—A meeting will be held on Thursday, January 18, at 8 p.m., when the following papers will be read:—1. Mr. A. W. Allen, The Life-history of Margaritifera Panasesæ; 2. Mr. A. D. Cotton, F.L.S., On some Endophytic Algæ; 3. Dr. R. Broom, Jacobson's Organ of Sphenodon.

Too Late for Our Almanac.—The Harrow Horticultural Society will hold its annual exhibition on Tuesday, July 3, and the Barnsley Chrysanthemum Show is provisionally fixed for November 15 and 16.

Handkerchiefs for the Prince and Princess of Wales.—The British Cotton-growing Association, through their President (Sir Alfred Jones), forwarded to Marlborough House recently two boxes of handkerchiefs made from West Indian cotton for their Royal Highnesses the Prince and Princess of Wales. The handkerchiefs were made from cotton grown in Barbados and St. Vincent from American Sea Island seed, which, when manufactured, has a natural gloss, and is said to be very much superior to similar cotton grown in the United States. Sir Alfred Jones has received the following acknowledgment:—

> Dear Sir,—I have received to-day the two boxes containing handkerchiefs made from West Indian cotton, which the British Cotton-growing Association have been kind enough to offer for the acceptance of the Prince and Princess of Wales.
>
> I am directed to convey to you and the members of the Association the best thanks of their Royal Highnesses for these specimens of manufactured West Indian cotton.
>
> Their Royal Highnesses are interested to know that the cotton grown from Sea Island seed is of such superior quality, and they trust that the efforts of the Association in other parts of His Majesty's dominions may be as successful as they have been in the West India Islands.
>
> (Sgd.) ARTHUR BIGGE.

Publications Received.—From the Board of Agriculture: Leaflets No. 155: *Larch Canker.*—(Dasyscypha calycina); No. 156: *Hedgerow Timber.*—*Farm and Home Year Book* for 1906. Containing articles on live stock of the farm, useful tables, lists of societies, &c.—*Report of the Botanical and Agricultural Department, Gold Coast*, for 1904. By W. H. Johnson. Two new experimental cotton farms were started, and the interest taken in Cotton, Rubber, and other crops is increasing, thus bringing more work upon the staff.—*The Animals' Friend*, January.—*Annual Report of the New Zealand Department of Agriculture*, 1905. The returns from the main products—wool, meat, butter, cheese, and Phormium fibre have been especially good. Grain-growing, however, is decreasing as it proves less remunerative than the other industries. Root crops are increasing. Good work was done at the experimental stations and the biological and horticultural department was kept busy.

SEED LIST RECEIVED.—We have received a list of fruits and seeds offered for exchange by the Botanic Garden of the University of Zurich. Applications for exchanges should be made before the middle of February to Dr. Hans Schinz, Direktor des botanischen Gartens u. Museums der Universität, Zürich, Switzerland.

THE FERNERY.

A NEW FORM OF REPRODUCTION IN FERNS.

As an entirely new form of Fern reproduction may interest many readers of the *Gardeners' Chronicle*, I append the details of my recent exhibit at the Linnean Society of a plant of Cystopteris montana which presented such a phenomenon.

In 1904 a friend sent me a normal plant of C. montana, and as it was small and the season advanced, it appeared to perish, but in the subsequent spring on turning out the pot I found a spark of life remaining, replanted it, and in time the plant established itself so far as to send up two normal fronds some 4 inches high. In July on examining it I perceived a clump of very small, almost sessile, pinnatifid fronds had formed on the caudex at the base of one of the normals, and as these were peculiarly thin and translucent it struck me that they were aposporous growths, i.e., fronds modified into a prothalloid form. With this idea I detached one and layered it. This and the undetached ones have retained their green and living character through the winter, i.e., up to the present, although the normal fronds followed the habit of the species by dying down at the end of August or beginning of September. In October, examining the culture under a lens, I detected two apogamic bulbils, each situated in the sinus or indentation which characterised the tips of the pinnatifid subdivisions, and at the time of my exhibit both these were clearly buds showing the incipient circination of rising fronds, and evidently capable of establishing themselves. We have here, consequently, not merely one, but several, unrecorded features, viz. :—

1.—A normal plant yielding aposporous prothalli; all examples so far have been varietal forms.
2.—A new species displaying this character.
3.—A normally deciduous fern producing evergreen fronds.
4.—Entire fronds of a prothalloid texture, while so far all examples of apospory have been either extensions of terminal points on large fronds or modifications of the soral growths on such.

I may add that the prothalloid fronds numbered half-a-dozen and were only about ½ inch long, with a very short stalk and three or four pinnatifid pinnæ each ending in a blunt indented tip resembling an incipient prothallus. Several others have partly risen, and the clump is firmly attached to the creeping rhizome characteristic of this Cystopteris. Furthermore, despite the number of those which have finished growth, they are all of the same size, displaying no tendency to successional enlargement as do young independent ferns. Subsequently I severed and layered two more in November, and these are perfectly healthy, and I have little doubt will follow the same course as the first, when the growing season arrives. The culture has been under quite cold conditions but under glass slips. *Chas. T. Druery, V.M.H., F.L.S.*

HORTICULTURE IN THE PUNJAB.

A common remark addressed to residents in India is, "What lovely flowers you must have in your garden out there!" and, so far as shrubs and trees suited to the climate go to make a pleasaunce, there are gardens in Calcutta and Bombay that will compare with anything of the kind in corresponding latitudes. In many places, more especially where European planters or others are settled—in the Himalayan or Suralit valleys, for example—in the Nilgiris, or in Behar, such home favourites as Roses, Heliotrope, and, where the seasons permit, Mignonette and other annuals are grown successfully; but in North-Western India, for the most part, the only gardens, as we understand the word in England, that attain more than a hand-to-mouth existence are those kept up with aid from the public funds by organised subscription.

This is due in great part to the fact that the wealthiest natives of the Punjab, for example, are only beginning to take a slight interest in scientific horticulture; while the Europeans there are necessarily, in most cases, only birds of passage. At the same time, the remarkable extremes of temperature which prevail from East Persia almost to the borders of Bengal have to be reckoned with, and are mainly answerable for the rather meagre limits of indigenous gardening and fruit-growing. The hot winds that sweep the Central Punjab from the end of April till well on in June wither all but the toughest forms of subtropical vegetation, unless water is constantly supplied; but water can be got solely from wells that are liable to fail, or from canals, which, however splendidly organised, can only give a share to every thirsty claimant in his turn. Then the rainy season may occasion floods, or it may fail altogether; and the winter, while it brings relief to such representatives of temperate floras as have struggled through the vicissitudes of the hot weather, may usher in a sweeping frost to annul the toil and care of years in the small hours of a single morning.

In such a climate, or, to speak more correctly, such a series of climates, horticulture must be often costly, commonly precarious, and, for those practically engaged in it, continually arduous.

In reviewing the operations of the Lahore Agri-Horticultural Gardens for the last year, the "Civil and Military Gazette" observes :—

> "An unfavourable season greatly interfered with successful work last year; the damage done by the failure of the monsoon and the shortage of irrigation water in the summer, and by the unprecedented severity of the weather in January and February last being most serious. Nevertheless, the President of the Gardens Committee and the Punjab Government alike congratulate the superintendent, Mr. Hemsley, on the progress he has effected under adverse circumstances, and those who remember the unfavourable conditions and the state of the gardens during the year will cordially re-echo the praise given."
>
> "The frost last winter caused severe damage to over three thousand fruit-trees, of which nearly two thousand were Mangoes. But the drought and shortage of water were responsible for much more serious loss, estimated at over 50,000 trees, cuttings, and seedlings, valued at nearly Rs.18,000."

The loss entailed on the management by drought alone, therefore, exceeded the whole annual grant which the garden receives direct from the Exchequer, as stated in the same article; but the difficulty and discouragement involved cannot be so readily expressed or estimated.

We must hope that for gardening, as for all other branches of enterprise in the "Land of the Five Rivers," a brighter cycle will follow the period of stress and calamity through which it has been passing. It is stated that the committee, acting, doubtless, largely on the skilled advice of the superintendent, have resolved on certain changes of a practical kind in the conduct of their operations. Mangoes will be reared, as hitherto, for grafts; but "no further attempts will be made to grow them for the market on a large scale."

Grapes, to which the local climate is unsuitable, will not be tried further and experiments with the Arabian Date have also been discontinued.

As what may be termed the spontaneous distribution of the Arabian Date palm shows that its cultivation cannot be carried on profitably in India proper except in the extreme south-west corner of the Punjab and in Sindh, we must attribute previous efforts to acclimatise it elsewhere to a laudable reluctance on the part of our countrymen to acknowledge themselves beaten. Of the Mango, "after its kind," there is plenty grown where it will pay, in private or in village orchards already, and those who require superior varieties find it easy nowadays to import them from Bombay, for example; but a stock of cuttings for the supply of local gardens, public and private, cannot be dispensed with; for it must be remembered that there are no independent nurseries nearer than Calcutta from which growers can obtain improved varieties. Throughout the Punjab there are practically neither nurserymen nor seedsmen, in spite of the enormous agricultural interests involved; such seedsman's business as there is being in the hands of petty market gardeners, who supply small quantities of vegetable seeds at intervals, chiefly to the members of their own community. As a means for disseminating grafted and improved varieties of shade and fruit trees, the Lahore garden has an important function to discharge, and in a country of largely commercial estates and peasant holdings it is closely associated with the Agricultural Department. At the same time, it is pleasant to note that other aims and uses of a leading public garden have received due recognition; and that the recent administration of the garden has elicited popular as well as official approbation. "Much attention," it is noted, "has been paid to the improvement of the lawns and grass borders," and the next step is to screen the "mounds" with shrubs and plants. Anyone who may have been fated to acquire a direct acquaintance with the "mounds" referred to must agree in the congratulations tendered to the committee and to the superintendent on their scheme of improvement and the advances actually made towards its accomplishment. The Lahore *Jardin des Plantes* follows a distinguished precedent in embracing a zoological department, and Mr. Hemsley's Kew experiences have been amplified with the aim of securing an effective and humane accommodation for a considerable Fauna also. *J. R. W.*

[Since the receipt of this communication the sad intelligence of the death of Mr. Oliver Hemsley has reached us. See p. 32.—ED.]

NOTICES OF BOOKS.

[*] **THE HANDY BOOK ON PRUNING.** By James Udale.

ALTHOUGH the author of this little work has nothing new to teach, the chapters dealing with the various up-to-date methods now generally employed are written in a pratical, lucid, and concise manner. To the amateur and inexperienced it will prove useful and instructive. If the illustrations had explained by means of diagrams where to pinch the shoots in summer and where to prune them in winter, it would have conveyed to the reader more than is possible by pages of text.

When dealing with Roses the author refers to individual varieties, and many mistakes may be avoided in this manner if reference be made to these chapters. The book includes instructive advice upon the pruning of flowering trees and shrubs, as it gives a tabulated number of kinds requiring such treatment at different seasons.

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[*] Published by W. & H. Smith, Ltd., Evesham. Price 1s.

NOVELTIES OF 1905.

(Continued from page 4.)

NURSERYMEN.

Messrs. SANDER & SONS, St. Albans and Bruges, notwithstanding the vast extent of their undertaking and the varied character of their productions, still manifest their enterprise in importing good and new Orchids even now that the hybridist has introduced a competition bearing hard on the expensively-acquired imports. If we look back on the number of fine species which would have been lacking in gardens had it not been for the enterprise of Messrs. Sander, it is a source of gratification that their efforts in that direction have not ceased. Following the fine Cymbidium Parishii-Sanderæ and other first-class plants of the year before, their 1905 record includes the beautiful Cymbidium Sanderi, the new and pretty C. erythrostylum, which recently flowered at Glasnevin; Vanda Watsoni, Cœlogyne Lawrenceana, C. speciosa alba, and some other pretty species and varieties. Their efforts in raising new hybrids were rewarded with Cypripedium × Leeanum "J. Gurney Fowler," and C. × "The Baron"—two marvellous Cypripediums, of which they may well be proud; C. × G. G. Whitelegge, C. × tessellatum rubens, and a number of other Cypripediums, Cattleya Schröderæ "The Baron," C. × Iris inversa, C. Mossiæ "White Lady," C. M. Reineckiana excelsa, C. Warscewiczii "Our Queen," Odontoglossum × crispo-Harryanum "King Edward," O. × amœnum, Sander's variety; Warczewiczella discolor atrocœrulea, and others. Messrs. Sander & Sons were also "first in the field" with Cypripedium Fairrieanum.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, continue to develop grand novelties out of their well-known hybrid Cattleyas, Lælio-Cattleyas, and Brasso-Cattleyas, and their work in Odontoglossums of the last few years begins to be productive. Out of their hybrid Odontoglossums, home-raised O. × excellens and others have flowered, the two best being the beautiful O. × Smithii (Rossii rubescens × Harryano-crispum), and the elegant O. cirrosum cross named O. × Phœbe. Others which secured awards were Cattleya × Octave Doin, C. × Lord Rothschild Fairy Queen, a pretty white-petalled form of a showy and fragrant hybrid; C. × Iris His Majesty, perhaps the richest in colour in its class; C. × Germania magnifica, Brasso-Cattleya × Digbyano-Trianæi, Heaton variety; Lælio-Cattleya × luminosa Rosita, L.-C. × Issy cuprea, and many others. Messrs. Charlesworth during 1905 received a first-class certificate for the rare Cymbidium Huttoni, and rendered a service to gardeners by importing a great quantity of the fine Phalænopsis Rimestadiana, and other showy species and varieties.

Mr. H. A. TRACY, of Twickenham, secured awards for the showy Odontoglossum × loochristyense, Tracy's variety, and Cypripedium purpuratum, Tracy's variety. Messrs. HUGH LOW & CO., Enfield, for the beautiful white Lycaste Skinneri alba magnifica, the handsome Cattleya Mendeli "Cicero," and the fine rose-purple Dendrobium Phalænopsis Thundersleyense. Messrs. JAMES VEITCH & SONS showed the massive and richly-coloured Cattleya × "King of Spain," fine forms of Odontoglossum × ardentissimum, and other hybrids; and other contributions came from various raisers.

CONTINENTAL NOVELTIES.

M. CHAS. VUYLSTEKE, of Loochristy, Ghent, was well first with his grand hybrid Odontoglossums, his O. × Vuylstekeæ being a marvellous production, and his O. × amabile and variety Ixion, and the handsome O. × Lawrenceanum, worthy novelties.

M. PEETERS, of Brussels, has his hybrid Odontoglossums perfecting, and O. × Lambeauianum, and its variety exquisitum, of his production, have both been illustrated in the *Gardeners' Chronicle* in 1905. Odontonia × Lairesseæ, of M. Lairesse, is a remarkable novelty; and the Marquis de Wavrin (gr. Mr. de Geest), who has been a frequent exhibitor in England, has secured awards for several good things.

The following Novelties and rare Orchids were illustrated in *The Gardeners' Chronicle* in 1905:—

Bulbophyllum Lobbii colosseum, Supp. Sep. 2.
Cattleya Mossiæ, White Lady, July 1, p. 7.
Cattleya Schröderæ, The Baron, p. 1, Supp., June 3.
Cymbidium Huttoni, July 22, p. 63.
Cymbidium Gammieanum, Dec. 16, p. 427.
Cymbidium rhodocheilum, Supp., June 17.
Cymbidium Sanderi, Feb. 25, p. 115.
Cypripedium debile, Dec. 23, p. 442.
Cypripedium Fairrieanum, Aug. 26, p. 168.
Cypripedium Gratrixianum, Feb. 4, p. 77.
Cypripedium × Haywoodianum, Apr. 1, p. 195.
Cypripedium × Leeanum J. Gurney Fowler, Supp. Feb. 11.
Cypripedium × The Baron, Dec. 9, p. 405.
Dendrobium parcum, May 20, p. 314.
Dendrobium triflorum, Jan. 7, p. 15.
Lissochilus purpuratus, May 13, p. 290.
Odontoglossum × amabile, "Ixion," Supp., p. 2, June 3.
Odontoglossum × crispo-Harryanum, "King Edward," May 6, p. 276.
Odontoglossum crispum, Raymond Crawshay, June 17, p. 375.
Odontoglossum crispum "Solum," May 27, p. 322.
Odontoglossum × Lambeauianum, Nov. 4, p. 324.
Odontoglossum × Lambeauianum exquisitum, Dec. 23, p. 434.
Odontoglossum × Lawrenceanum, Apr. 1, p. 197.
Odontoglossum × Smithii, Dec. 16, p. 427.
Odontoglossum × Thompsonianum, May 6, p. 285.
Odontoglossum × venustulum, July 1, p. 2.
Odontoglossum × Vuylstekeæ, Nov. 25, p. 379.
Odontoglossom × Wiganianum, May 6, p. 274.
Odontonia × Lairesseæ, July 1, p. 2.
Oncidium corynephorum, Nov. 1, p. 340.
Oncidium robustissinum, July 15, p. 45.
Phalænopsis (Charlesworth's), May 4, p. 131.
Phalænopsis Schilleriana, Supp., March 11.
Sophro-Cattleya × Doris, Dec. 9, p. 412.
Stanhopea Wolteriana, Aug. 5, p. 102.
Vanda Sanderiana, Chillingham variety, Dec. 23, p. 438.
Vanda Watsoni, Feb. 25, p. 123.

(To be continued.)

LEAVES FROM MY CHINESE NOTE-BOOK.

WA-SHAN TO FULIN.

(Concluded from page 13.)

JULY 7TH.—We left our inn at 5.45 a.m.; mists were falling and the outlook was very dreary. We followed an up-and-down path, which skirts, ribbon-like, the side of the mountain and reached Malie-Hsao, altitude 7,700 feet. We continued to ascend and descend, and eventually made a precipitous descent to a torrent, and rested at a house at an altitude of 5,800 feet. Before we began the descent small bushes of the Davidia were common. This tree doubtless at one time formed a fair percentage of the forest flora. The descent was through dense scrub and coarse herbs. Amongst the latter Astilbe grandis was abundant. Hydrangea Davidii was also common. Leaving our resting place we continued to descend, and eventually we crossed a broad torrent and ascended a few hundred feet to the village of Malie at an altitude of 5,200 feet; ten miles from Tsai-erh-di. Just before crossing the torrent I discovered a Pine new to me (P. yunnanensis)—see p. 227, Sept. 23, 1905. In the bed of the stream Watercress was very abundant. On the stone walls here I collected a new Davallia, and near the bed of the stream Leycesteria formosa for the first time since leaving Yunnan.

This valley enjoys a warmer temperature than its altitude should warrant. This is evidenced by the flora. Trachycarpus excelsa, Phyllostachys mitis, Cratægus pyracantha, Alnus nepalensis, and the Loquat were quite common. Near the village we passed a grove composed entirely of Rhus semialata and R. hypoleuca, with an occasional bush of Clerodendron trichotomum; Panax ricinifolium also occurs here. Malie is quite a large village, and the people were, as usual, very filthy and inconveniently curious.

We left here at 11 a.m., glad to escape into the open country again. Rice is cultivated just outside the village. Ascending a hundred feet or so we reached the top of a ridge and got a magnificent view of the valley around Fulin, with the Tung river and two large tributary streams. The scene is one of those unexpected ones that constantly surprise the traveller in China. The mountain-slope was a mass of green of Rice and Maize, with thousands of small trees of Ligustrum lucidum around the fields, all in full flower. This mountain side is well irrigated by means of a conduit, which conducts the water from a torrent. This water turns numerous horizontal water-mills in its course, and afterwards branches off in many channels, irrigating the rice fields. After being shut up amongst rugged mountains for several days we were able to appreciate a valley scene once more. From this ridge the town of Fulin looked scarcely twelve miles away, but it proved a long twelve ere we arrived there.

The descent, at first steep, became more gradual till we approached the first large tributary stream, where it was very precipitous. In the descent we met many coolies carrying opium from the Chien-chang Valley to Omi Hsien. With them were several dealers all armed with old tower muskets, pistols, swords, and knives of various designs. They looked more like brigands than peaceful traders.

On the Ligustrum tree was plenty of white wax, looking just as good as that on the Fraxinus around Mount Omi. Indeed, this mountain side reminded one of that fertile region, and compares favourably with it. In the descent I gathered Lilum Bakerianum, but it was not common.

Crossing the broad stony stream by means of several plank bridges, we rested at a small village, altitude 2,800 feet. Indigo (Strobilanthes flaccidifolius) is sparingly cultivated here. After a steep ascent from this village, we crossed the ridge (altitude 3,500 feet), which separated us from the valley of Fulin. In this ascent, to my great delight, I gathered Scolopendrium Delavayi for the first time since leaving Yunnan in 1899.

Descending from this ridge by a precipitous path we reached the stony bed of a broad and nearly dry torrent, and in a little time arrived at the town of Fulin, altitude 2,150 feet, a large and populous place noted for its fine wheaten flour. Dogs here were more numerous and ferocious than anywhere I have been. My coolies, armed with sticks, with difficulty kept them from tearing my poor dog to pieces. My dog excited even more curiosity than I did; together we appeared to amuse and astonish the natives.

We found lodgings in a large and comfortable inn, quite away from the gaping crowd. Soon after our arrival two men came and called, bringing cards. On enquiring their pleasure, I found they were beggars, and wanted me to assist them with money. On refusing they became insolent and demanded it in the name of the Custom. I sent my card to the military official complaining. He came round immediately, bringing with him a dozen soldiers. He was in a fright, and after apologising and explaining at great length, offered to arrest and punish them if I so willed. I told him I did not wish the men to be punished, provided they did not pester me any more. After much talk, the affair was settled amicably, and the official, his men, and the crowd went away and all was quiet once more. I think the explanation of this unusual affair is that these two men were "undesirables" stranded here, and the inhabitants were anxious to get rid of them.

My collections grew apace, and it took all hands three hours changing papers. Travelling 20 miles a day as we had been doing, and collecting every day, though very interesting, is exceptionally hard work. This day was very interesting. It is not every day we find a new Pinus. In addition to those already mentioned, the following were the most interesting plants noted to-day:—Berberis acuminata, Taxus baccata, Fraxinus platypoda, Halesia hispida Chelidonium Franchetianum, Sapindus Mukorossi, Pieris sp., Acer sp., Hydrangea pubescens, Astilbe chinensis, and Cedrela sinensis. *E. H. Wilson.*

(To be continued.)

COLONIAL NOTE.

GRENADA.

Mr. W. E. Broadway, the late Curator of the Botanic Station, has started a large nursery of economic and ornamental plants, and is prepared to accept orders for strong, healthy plants to be delivered early in 1906, Among his list of economic plants we note the grafted Ceylon Mango, which is generally recognised as the best of the imported mangoes. We hope Mr. Broadway will be successful in his venture.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Cross-Fertilisation of Apples.—I have read with interest Mr. E. H. Bowers' notes on this subject in your last issue, and certainly the diagrams given would go far to prove the parentage of "Allington Pippin," though I fear there are no facts to substantiate the theory. Mr. Bowers gives the parentage, and even the seed parent, but I am at a loss to know from whence he obtained the information. In 1894 I paid a visit to Messrs. W. & J. Brown's nursery at Stamford, and there found this Apple growing and fruiting well. The foreman asked my advice as to the desirability of sending fruit up to the Royal Horticultural Society for certificate, and I strongly advised him to do so, the result being that it obtained a first class certificate under the name of "South Lincoln Beauty." I asked the foreman its history, which was as follows. The late Mr. Thomas Laxton raised a large number of seedling Apples, and after his death a number of these were sold by auction; some varieties of which there were a stock were sold in their entirety, and others were put in bundles and sold without any names or anything to identify them. A gentleman residing in Stamford bought one of these bundles and planted the trees in his garden. Messrs. Brown's foreman subsequently pruned this gentleman's trees for him, and being taken with the appearance of this particular Apple, and having seen the fruit, begged the prunings and worked them in Messrs. Brown's nursery, his employers knowing nothing of this until the tree fruited, when he showed them to Mr. W. Brown. I think I can trust my memory upon these points, as I am pretty keen upon these matters, and I fully intended to purchase the stock, but as we were just then removing our nurseries we had not much opportunity of taking up a new variety, and Mr. Bunyard made a better offer for it, which was accepted, and the name was subsequently changed to "Allington Pippin." The Apple will be no better or worse whatever its parentage, but those who look at these matters from a scientific point of view will like to make sure of their facts before they build upon them. I may say that I am often dubious upon the question of parentage, because I have investigated cases where the parentage given has been pure guess-work. Take for instance "Newton Wonder," which has scores of times been said to be a cross between Dumelow's Seedling and Blenheim Pippin. The man I bought it from told me he found it growing in the garden of the house when he went to live there, and that it was a chance seedling; subsequently a parentage was invented for it. The fact is that in the years gone by there were very few people who knew how to cross an Apple, and still fewer who kept any record of their crossing. Mr. Laxton most undoubtedly did both, but from what I have stated I don't think that any record kept would apply to Allington Pippin. *A. H. Pearson, Lowdham.*

The Hardiness of Lord Suffield Apple (see December 30, 1905, p. 457; January 6, p. 15).—All Apples of the Codlin group, to which the variety Lord Suffield belongs, expand their leaf-buds and develop their leaves at the time of flowering, and, as generally there are only two or three blossoms to be found upon each cluster, they are sheltered by the foliage, and thus protected against frost. As regards the other varieties enumerated, a good deal of the crop is often lost as a result of the pruning. I have never seen the trees at Belvoir Castle Gardens, Grantham, but I have been into a large number of Kitchen and Fruit gardens, and, speaking generally, have invariably found the pyramid and bush trees of all varieties pruned in the same fashion and form, regardless of their habit, constitution, or fruiting qualities. I am afraid a good deal of the pruning is done by copy from Mr. So-and-So's garden more than from practical experience. Many trees I have seen appear as "pollard" trees. I have seen unpruned bush trees last year (1905) in this locality of Lane's Prince Albert, Worcester Pearmain, Cox's Orange Pippin, and others, bearing good crops. I would recommend Mr. Divers, if he has not already pruned his pyramids, and he possesses two or more trees of a variety, to leave one unpruned this year; simply cut away unsightly portions, or a branch which comes in the way of another crop or the garden path, and watch the result. To cut away all the terminal branches or growth made in one season is wrong. Nature provides that the Apple tree should make these terminal growths, which burst into leaf about the time of flowering, and these twigs of greenery make, so to speak, "break-frosts" against the trusses of bloom, and thus save the crop from destruction. When all the wood is cut away, and the branch is become a regular pollard, exposing the flowers to all dangers from frost or rains, it is little wonder the crop is lost. Of course where an abundance of young wood has been made, I would recommend shortening back, but not close down to near the base of the growth. Dealing with the varieties named, a knowledge of the character of the particular Apple is necessary to ensure success. Red Bietigheimer, for example (and I could name many others), if a crop is to be looked for, and the trees are worked on the paradise stock, should be lifted and replanted every two years. If this were done many varieties would produce more fruit than they do under present conditions. Mr. Divers has stated that his trees of Bess Pool have cropped well. I know of other late flowering varieties, including Court pendu plat, King of Tompkins'. County, that yielded good crops in 1905. From appearances the earth has shifted on its axis, and thrown our seasons as they were by report 50 years ago, two months behind. We get December weather in February, frosts in May and June as in 1905. If our seasons are thus to become later year by year, in a few years what is to become of the fruit-growing industry in this country? I believe that a stock which will come into leaf later in spring than the Paradise or the Crab is required in order to retard the flowering season of the Apple. I have looked for such stock for years past in beds of seedlings, and have found a few, but the process is slow and no useful results have been obtained. I would, therefore, use the late flowering varieties, Bess Pool, Court pendu plat, for budding on the Paradise or Crab stocks, and afterwards graft the desired variety, say Cox's Orange Pippin upon Court pendu plat. For a culinary Apple I would choose a cooking Apple as the intermediary agent, and dessert kinds in the same way. I believe the late varieties would then retard the earlier flowering varieties. To obtain standards I would bud my selections on to the agent in order to run up clean straight stems, for grafting, I find, throws the subject more quickly into fruit. For espaliers, cordons, and pyramids, grafting on to the agent saves time in reaping a crop. *John Smith, care of Messrs. Keynes, Williams & Co., The Nurseries, Salisbury.*

—I have found that Lord Suffield Apple is a tender variety and requires a fertile soil and sheltered situation. Lord Grosvenor is recommended in place of it for that reason. Apple blossoms escape frost in May when protected by the foliage. This is especially the case where, as with my trees, hard pruning is avoided. Nearly all my Lord Suffield and many other varieties of Apple last year were borne on the extremities of shoots that naturally drooped and sheltered the blossoms with tufts of leaves. In many instances the Apples were in clusters of three fruits and had to be supported. That neglected Apple "Smart's Prince Arthur" was quite ornamental with its pendent shoots laden with ruddy fruits. I found the same thing occurred with "Pitmaston Duchess" Pear, of which I had several trees laden with fine fruits equal to any that I saw exhibited. These also had to be supported and in some cases thinned. My advice is to cut back some shoots for furnishing wood and leaves only and to leave others unpruned for bearing fruit. *W. Roupell, Harvey Lodge. Roupell Park, S.W.*

Sowing Seeds of Pentstemon.—When for particular purposes decided colours are required of this profuse blooming and invaluable plant, it is essential that cuttings should be taken of the desired varieties in the autumn. Where, however, they are only wanted in mixed masses in borders with other flowers or in beds by themselves much may be said for propagation by seeds There are such excellent strains, that a fine display of blooms can be depended upon. The strain of selected "pink shades" offered by one or two firms is particularly good, as in it the less pleasing purple colour is nearly if not entirely eliminated. To obtain plants for flowering at the end of June and beginning of July and continue blooming until October, seed must be sown in heat at once. In a few weeks' time the seedlings will be fit to be pricked out into boxes, in which, after they have made sturdy growth they can be placed in a cold frame to harden off, and by April they will be ready for planting out. *Hugh A. Pettigrew.*

Weather in North Cornwall.—While London commenced the New Year with hard frost we in North Cornwall suffered from a deluge of rain. On Monday ·83 inch fell, and on Tuesday over $1\frac{3}{4}$ inches (1·79) fell. This is the heaviest 24 hours' rainfall of which I have any record. The previous record rainfall was 1·73 inches on November 28, 1902. During the first six days of this year our rainfall amounted to 4·35 inches. This will go far towards making up the deficit of 9 inches on last year's rainfall. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

Pruning.—The pruning of Pear trees, etc., may be proceeded with in suitable weather. The fruit buds can be very easily distinguished, and may be thinned out if too numerous. Some varieties have the peculiarity of fruiting on the extreme end of the shoot, and in this case the operator should prune accordingly. Comte de Lamy (one of the best Pears) is one of these. The wood buds or spurs should be cut back to two eyes, as too many shoots on a tree in a limited space is a disadvantage. Long, ugly spurs may be cut right back, half of them one season, and the remaining half the next. *W. A. Cook.*

East Lothian Stock.—No plan for a flower garden would be complete without a place being assigned to this lovely strain of intermediate stock. It is so ornamental during the summer and autumn months, and can be used either in the formal design or in the herbaceous borders, where its colours can be easily arranged. Last year I had a formal garden entirely filled with this delightful plant, and the effect elicited admiration from all who saw it. For preference, the rose and the crimson coloured are best for massing, as they are more profuse and showy in their flowering. The purple one is inclined to be shy in blooming. Seeds should be sown now so as to raise early plants and obtain a lengthened flowering period. Sow the seeds thinly in boxes and place them in a moderate degree of heat, and when the young plants are large enough prick them out into fresh boxes, filled with a light and rich compost. When they again become crowded, pot them up into large four-inch pots, in which as soon as they become established they can be placed in shallow cold frames. By April they will have become strong, sturdy, well-rooted plants, fit for planting out in the open ground without fear of suffering check. Treated thus, these stocks will give a display of flower from June until Septemper. *Hugh A. Pettigrew.*

HANGING BASKETS.—Where there has been a demand for material for table decorations, tracery, etc., baskets containing Asparagus Sprengerii, A. deflexus, and other varieties will have been very much reduced by cutting. The present is a suitable time to re-basket any that need it, and if there is a necessity to increase the stock, this can now be done by division. If this is done now, the baskets will become well furnished with young growing shoots early in the season. Owing to the large demand for cut growths of A. Sprengeri, it is advisable to sow a few ripe seeds each year. Plants that were raised from seeds sown last year, if placed in baskets, will provide very useful sprays for cutting next autumn and winter. The baskets should be provided with a lining of moss. The rooting medium should be of turfy loam, leaf mould, and peat in equal portions, with a liberal addition of coarse sand. Afford manure water or other stimulants liberally, when the plants are growing freely. An atmospheric temperature of 65° will cause the plants to grow freely, but when growth is finished much less heat will suffice. *B. Cromwell.*

THE LATE HARRISON WEIR.—The death of Mr. Harrison Weir at the ripe age of 82 years is a loss to those of us who have known him well for a quarter of a century and upwards. Our friend was an enthusiastic amateur gardener and a lover of what are termed "florists' flowers," such as the Auricula, Carnation, etc., and he was frequently to be met with at the fortnightly meetings of the Royal Horticultural Society until quite recent years. At his profession as an artist he obtained world-wide fame for his inimitable drawings of natural history, birds, and poultry. As early as 1843 he exhibited an oil painting of a wild duck, and subsequently he exhibited at the Royal Academy and the Society of British Artists. He must have made thousands of drawings in black and white and many in colours, for publication in books. He was a member of the staff of the *Illustrated London News* from its inception, and was the only survivor of the original artists. His last, and certainly his greatest, work was "Our Poultry and all about them." This monumental work occupied him for the best part of twenty years. The letterpress, comprising 600,000 words, was written by him; he made nearly all the 350 black and white drawings and the 37 coloured plates. He was the originator of the first cat show, and a good judge of poultry and pigeons. He was a strenuous worker, and his relaxation was gardening. Mr. Weir was at one time a member of the Fruit Committee of R.H. Society, and had a good knowledge of all hardy fruits. His birthday was May 2, 1824, but I sometimes sent him a few Auricula plants in April as a reminder of his birthday. These were great favourites, and he especially admired the "Fancy" varieties; they appealed most strongly to his artistic eye. The Alpine varieties he planted in his garden. I have one of his letters before me which is dated May, 1903, thanking me for a few plants. He wrote:—"You have added much joy to the remnant of my life. How beautiful they are—sweet, pleasurable, and delightful. . . They are a new joy to the garden. . . My garden is coming on bravely, and my heart swells with a joy the world knows not of." His last letter to me was in October, 1904. I will make one short extract. "It is not the first time by many that you have gladdened my heart by the gift of beauty made by nature with your skill and help. I think we all might do a little more than we do to pleasure each other." I possess several of his beautiful drawings; kind gifts to me, which I greatly value. My friend was a true lover of the garden and of everything beautiful in nature. He has finished his life's work. His work was that of an earnest and true man, and we can truly say of him: "Well done, good and faithful servant." *J. Douglas*

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 9.—The first meeting of the Committees in 1906 was held on Tuesday last in the Royal Horticultural Hall, Westminster. Some of the Committees were unusually well attended. The display of exhibits was satisfactory for a mid-winter exhibition, and Orchids thus early in the year claimed a large share of the space on the tables and of the interest of visitors.

The FLORAL COMMITTEE awarded medals to excellent groups of Cyclamens in pots, also of forced plants of Rhododendron molle, Hippeastrums, cut flowers of Carnations, and many other species of flowering plants, and others, but no award was recommended to any novelty shown.

The FRUIT AND VEGETABLE COMMITTEE recommended a First Class Certificate to the variety of Orange which the Floral Committee honoured at the previous meeting, and also awarded several medals to collections of fruit. A vote of condolence was sent by this Committee to the widow of the late Harrison Weir, Mr. Weir having been at one time a member.

The ORCHID COMMITTEE recommended one First Class Certificate, one Botanical Certificate, and five Awards of Merit to novelties, and on this occasion the new scheme under which Diplomas will be awarded for particular plants came into operation, the plants for the day being Lælia anceps and Calanthes.

There was no lecture delivered at this meeting.

Floral Committee.

Present: W. Marshall, Esq., chairman, and Messrs. C. T. Druery, H. B. May, W. Cuthbertson, Geo. Nicholson, Jas. Walker, G. Reuthe, C. J. Salter, W. J. James, E. Molyneux, J. F. McLeod, W. Howe, R. W. Wallace, J. Jennings, C. Blick, H. J. Cutbush, Geo. Gordon, Chas, Dixon, C. E. Pearson, C. E. Shea, E. H. Jenkins, W. J. James, R. Hooper Pearson, Geo. Paul, J. Green, E. Mawley, Jas. Hudson, J. W. Barr, and E. T. Cook.

The Rev. H. BUCKSTON, Sutton Hall, Etwall, Derby (gr. Mr. A. Shambrook) exhibited a large array of Cyclamen plants of exceptional merit. Among the extensive collection white-flowering varieties predominated, but flowers of red, salmon, pink, and other shades were included, and all alike were sturdy in growth, clean in appearance, and of floriferous habit. (Silver Gilt Flora Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, staged a group of Cyclamen of the variety "Low's Salmon," a strain of very pleasing shade of colour and of neat, compact habit; also a number of Cyclamen flowers in vases, including examples with fimbriated and others with papillose petals. In addition to the Cyclamen, Messrs. Low contributed some excellent vases of Carnations. (Bronze Flora Medal.)

Mr. K. DROST, Kew Nurseries, Richmond, Surrey, put up a showy group of forced flowering plants. The display was arranged in a semi-circular manner, the centre being occupied by a grand batch of Hippeastrums (Amaryllis), which, although flowering so early in the season, were shown remarkably well, some of the inflorescences carrying as many as four, five, and even six flowers. Azalea mollis found a place in the foreground, which was completed by a band of Tulips. On either flank were banks of Lilac, flowering profusely, and rosettes of Tulips, the whole being intermixed with suitable foliage plants, and having as a background tall specimen Palms. (Silver Gilt Banksian Medal.)

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, displayed a batch of rare and interesting Ferns, all of which were well grown and staged with good taste. We noticed Asplenium scandens, A. elegantulum, Doryopteris nobilis, Drynaria quercifolia, Polypodium irioides ramo cristata, etc. (Silver Flora Medal.)

Messrs. W. PAUL & SON, Waltham Cross, Herts, showed nice specimen plants of Camellias, and a few baskets of cut flowers of the same. A feature was a number of well-trained examples of the old alba plena, still one of the best of the double white flowering type. Single varieties were also prominent, and among these Vesta (red), Minerva (salmon pink), Jupiter (a large flower, with a prominent ring of stamens, set off to advantage against the large red petals) were noticed. Other good things were Lady Hume's Blush and Reine des Fleurs, the latter almost unsurpassable for freedom of growth and flowering. (Silver Flora Medal.)

Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. E. Beckett), staged a miscellaneous collection of flowering plants, including Begonias, Mignonette, Cyclamen, Carnations, Cypripediums, Euphorbia Jacquiniaeflora, and a batch of seedling Streptocarpi, the progeny of the variety Royal Blue. The seedling Streptocarpi included many promising plants; some had flowers of the darkest shade of blue, and others were of a lighter colour, while the range of form and size was almost as wide as that of the shade of colouring. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited a number of sturdily-grown plants of Primulas. The colour and size of the "pips" indicated the excellence of the strain.

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, put up a large batch of Coleus thrysoideus, whose tall, pyramidal spikes of blue flowers were very noticeable. Intermingled in the group were plants of Jacobinia coccinea, and at either end were specimens of the Witch-hazel—Hamamelis arborea. Messrs. VEITCH also showed a Begonia, named Copper King, the bronzy-coloured flowers being responsible for the name, and plants of the Japanese long-fruited Orange. (Silver Flora Medal.)

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed berried and ornamental foliage plants, Erica codonodes, Daphne indica rubra, Garrya elliptica, Nerium splendens variegatum, &c.

Messrs. JOHN WATERER & SONS, Bagshot, Surrey, staged a number of ornamental Conifers, such as Cedrus atlantica glauca, Juniperus japonica aurea, Cupressus Lawsoniana erecta viridis, Irish Yews (Taxus baccata hibernica), gold and silver forms of Juniperus Sabina, &c.

Messrs. JOHN PEED & SONS, West Norwood, London, S.E., showed an extensive collection of Alpine and rock garden plants. We noticed Primula denticulata, Lachenalia pendula, and coloured Primroses in flower. (Bronze Banksian Medal.)

The Misses HOPKINS, Mere, Knutsford, Cheshire, displayed a small collection of Alpine plants—coloured Primroses, Christmas Roses, Hepaticas, Gentiana acaulis, &c.

Messrs. BARR & SONS, King Street, Covent Garden, W.C., had bowls containing Hellebores and vases of Iris unguicularis.

Messrs. THOS. S. WARE, Ltd., Feltham, Middlesex, showed several species of bulbous Irises, I. histrioides, I. alata, &c., a batch of Primula obconica, plants of Cheiranthus kewensis, pans of Alpine plants, and winter-flowering Carnations. (Bronze Banksian Medal.)

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, displayed a charming group of cut flowers of Carnations of popular and choice varieties. A few pot plants were included in the display. (Silver Flora Medal.)

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury Park, Acton (gr. Mr. George Reynolds), exhibited three bush-trained plants of Jasminum primulinum that were perfect pictures of beauty, the long, graceful, arching shoots being crowded with their beautiful Primrose-like flowers. (Silver Flora Medal.)

H. J. ELWES, Esq., Colesbourne, Cheltenham, presented two interesting plants—Veltheimia glauca, with Lachenalia-like inflorescences, and the curious Massonia pustulata, a Liliaceous plant, with broad, pustulate adpressed leaves, and a rosette of flowers arising from the plant's centre. (See *Bot. Mag.*, t. 642.)

Sir. ED. LODER, Bart., Leonardslee, Horsham (gr. Mr. W. A. Cook), showed a remarkable plant of Sarracenia purpurea, just as lifted from the open ground, and being about 2 feet across. It is rarely such a specimen as Sir EDWARD LODER'S plant can be seen in the open air, and it was awarded a Silver Banksian Medal, with a Cultural Commendation to the cultivator.

Mr. JAMES O'BRIEN, Marian, Harrow-on-the-Hill, showed a dozen inflorescences from a plant of Cyrtanthus lutescens, the plant having been continuously in flower for a period of six weeks.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (Hon. Sec.), Dr. Hans Goldschmidt (invited), De B. Crawshay, N. C. Cookson, J. Douglas, F. Wellesley, W. Cobb, R. G. Thwaites, W. H. White, F. W. Ashton, G. F. Moore, H. Ballantine, A. A. McBean, H. G. Morris, H. A. Tracy, H. J. Chapman, J. W. Odell, J. Wilson Potter, W. H. Young, W. Boxall, H. Little, W. A. Bilney, and Harry J. Veitch.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), was awarded a Silver Flora Medal for an excellent group, in which good Cypripedium × Maudiæ, varieties of C. insigne, two batches of the orange-coloured Lælio-Cattleya × Charlesworthii, scarlet Sophronitis, varieties of Lælia anceps, and a grand specimen of Lycaste × Balliæ, for which a Cultural Commendation was given, were noted.

Messrs. SANDER & SONS, St. Albans, secured a Silver Flora Medal for a good group rich in Cypripediums. C. × The Marchioness (Almos × Leeanum), C. × The Duchess (insigne Bohnhoffianum × aureum), and the fine C. × Earl of Tankerville being novelties. Also included were 20 varieties of Cypripedium insigne, Lælia × Finckeniana alba, Maxillaria [illegible], hybrid Epipendrums, &c.

Messrs. JAS. CYPHER & SONS, Cheltenham, were awarded a Silver Flora Medal for a very fine and well-staged group made up of the best forms of Lælia anceps, Cypripedium × Leeanum giganteum, with sixteen blooms; the distinct C. × Leeanum, Cypher's variety; the large C. × Charlesianum, Cypher's variety; C. × Arthurianum, with 25 flowers, and other good Cypripediums; Odontoglossums crispum, Hallii, and Adrianæ; Masdevallia Schroderiana, M. Heathii, &c.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr. Mr. Duncan), showed an effective group, in the centre of which was a large pan of the pretty yellow Oncidium cheirophorum. With it were good Calanthes, Odontoglossums, Cypripedium × Chameleon with large flowers having striped yellow and brown petals, and other Cypripediums. (Silver Banksian Medal.)

Messrs. HUGH LOW & Co., Enfield, staged a group in which were Vanda Amesiana, Bulbophyllum Dearei, a fine Dendrobium heterocarpum, Cypripedium villosum auriferum, and other Cypripediums; Lælia albida, Masdevallias, &c. (Silver Banksian Medal.)

Messrs. STANLEY & Co., Southgate, arranged a group of Cattleyas, Odontoglossums, &c., in which were noted Cattleya Trianæi alba and a good-coloured form of the species with purple feather on the petals; Odontoglossum × Loochristiense, O. crispum, various Masdevallias, Lælia anceps Amesiana; Cypripediums, &c. (Silver Banksian Medal.)

M. CHAS. VUYLSTEKE, Loochristi, Ghent, showed a small group of excellent hybrid Odontoglossums, including two O. × ardentissimum, three O. × Loochristiense, O. × amabile, O. × Vuylstekei, and others. (Silver Banksian Medal.)

Sir TREVOR LAWRENCE, Bart. (gr. Mr. W. H. White), showed a fine yellow Mormodes, and a singular Orchid resembling Schlimia.

FRANCIS WELLESLEY, Esq., Westfield (gr. Mr. Hopkins), showed the large Cypripedium × Ville de Paris with four flowers, the neat white Cattleya Trianæi Wellesleyæ with six blooms, the elegant Cypripedium × Bella, Westfield variety, C. × Memoria Jerninghamiæ, C. × Tracyanum, and others.

A. L. WIGAN, Esq., Forest Park, Windsor, showed Cypripedium × Joyce.

J. GURNEY FOWLER, Esq., South Woodford (gr. Mr. Davis), showed four varieties of Cypripedium × aureum; C. × Mrs. Wm. Mostyn, Chadwar variety, C. × Milo, Cobb's variety, and C. × Actæus Langleyense.

NORMAN C. COOKSON, Esq. (gr. Mr. H. J. Chapman), showed Cattleya × Chapmani (Hardyana, Oakwood variety, × Trianæi).

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. Day), showed Cypripedium × Niobe superbum, C. × Nellie Goodson, and Lælio-Cattleya × Mrs. Ernest Bourdas, a bright, rosy-purple flower.

Messrs. WILLIAM BULL & SONS, Chelsea, showed Sophro-Cattleya × Doris, recently illustrated in *The Gardeners' Chronicle*, with a pretty, reddish-yellow coloured flower, and two other hybrids.

HARRY D. HEADLAND, Esq., Balham, sent Cypripedium × Headlandianum (Lathamianum × Memoria Moensii).

H. J. ELWES, Esq., Colesborne Park, showed a fine plant of Pleione humilis and Habenaria Bonatea.

AWARDS.

FIRST CLASS CERTIFICATE.

Cypripedium × Alcibiades magnificum (Leeanum giganteum × Mons. de Curte), from Major G. L. HOLFORD, Westonbirt (gr. Mr. Alexander). A truly magnificent specimen; flowers very large, and of fine substance. The large dorsal sepal is white, with an emerald green base, and dotted lines of purple; petals and lip yellow, tinged and marked with purple-brown.

AWARDS OF MERIT.

Catasetum splendens punctatissimum, from Sir TREVOR LAWRENCE, Bart. (gr. Mr. W. H. White). A fine and distinct form of the natural hybrids of C. macrocarpum × C. pileatum. Lip fleshy, bright yellow. Sepals and petals whitish, densely spotted with purple.

Cypripedium × Bella, Westfield variety (vexillarium × philippinense), from FRANCIS WELLESLEY, Esq. (gr. Mr. Hopkins). A graceful and floriferous hybrid, with numerous flowers, arranged like those of C. philippinense, but of the rose tints of C. vexillarium. Cut spikes of the lighter typical form were also shown.

Lælio-Cattleya × Helena, Westfield variety (L. cinnabarina × C. Schilleriana), from FRANCIS WELLESLEY, Esq. A tall-growing hybrid, with distinct orange-coloured flowers having a purple-veined labellum.

Brasso-Cattleya × Pyrrha (B. glauca × C. labiata), from Messrs. JAS. VEITCH & SONS, Chelsea. Flower large, fragrant, and firm in substance, bright rose colour; plant dwarf.

Cypripedium × Earl of Tankerville (exul × nitens, Sanders' variety), from Messrs. SANDER & SONS. A charming and distinct hybrid, with well-formed flower of very thick substance. Dorsal sepal white with a small emerald-green base, the lower part bearing heavy chocolate-purple blotches, and the middle area large rose-purple spots; the broad petals and lip honey-yellow, marked with light reddish-purple and brown.

BOTANICAL CERTIFICATE.

Brassavola glauca, from H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. Day). This is a well-known, white-flowered, fragrant species.

DIPLOMA COMPETITION.

This was the first event of the year under the new rules designed to bring out the best of new or already shown hybrids and species. Coloured varieties of Lælia anceps, and species and hybrids of Calanthe were set down for the day. With these plants were arranged all the Society's paintings bearing on the subjects, and thus an instructive opportunity for comparison was given.

Major G. L. HOLFORD, DE B. CRAWSHAY, Esq., FRANCIS WELLESLEY, Esq., Messrs. McBEAN and others showed good forms of Lælia anceps, the L. a Schroderæ, and especially the fine varieties of it named Raymond Crawshay, Lionel Crawshay, and Theodora, which were far the best.

In Calanthes NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), staged a very fine group of the beautiful hybrids, principally raised at Oakwood, and ranging in colour from white to bright blood-red, that tint being reached in C. × Chapmani, the richest in colour and brightest in tint of any known Calanthe. Other good specimens were C. × atrorubens, C. × Sedeni lactea, C. × Phoebe, C. × Sibyl, C. × Victoria, C. × Bryan, C. × Wm. Murray, &c. JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. W. P. Bound), also staged a fine and varied group of C. vestita varieties, C. × Sandhurstiana, C. × Veitchii varieties, C. × Alpha, &c.

AWARDS.

Hybrids.—Calanthe × Harrisii (First Diploma), from NORMAN C. COOKSON, Esq.; the best white. First shown by Messrs. Jas. Veitch and Sons, 1895.

Calanthe × Veitchii (Second Diploma), finely shown by JEREMIAH COLMAN, Esq., and still the best for general cultivation in its section on account of its strong constitution and bright rose-pink flowers.

Species.—Calanthe vestita nigro-oculata gigantea (First Diploma), from NORMAN C. COOKSON, Esq. A very strong grower, with large white flowers with reddish crimson eye.

Fruit and Vegetable Committee.

Present: Jas. Cheal, Esq., in the chair, and Messrs. W. Bates, S. Mortimer, Alex. Dean, J. McIndoe, Geo. Kelf, H. Markham, Ed. Beckett, Jno. Lyne, F. Q. Lane, J. Willard, H. Parr, Chas. Foster, Owen Thomas, and W. Poupart.

The principal exhibit brought before the Fruit and Vegetable Committee was a magnificent collection, embracing over 100 varieties of Apples and Pears, shown by Messrs. GEORGE BUNYARD & Co., Maidstone, Kent. All the specimens were in fine condition, being large, plump, and highly coloured. As a selection of the more prominent varieties shown we may mention Bismarck, Belle du Bois (very large handsome fruits), Barnack Beauty, Cox's Orange Pippin, Wealthy, Pomme de Neige (small, handsome, highly-coloured fruits), Twenty Ounce, King of Tompkin's County, Newton Wonder (fruits coloured to a high degree), Striped Beefing, Blenheim Pippin, Belle de Boskoop (rough, russety fruits, with good dessert appearance), Christmas Pearmain, Cornish Gilliflower, and Brabant Bellefleur. Among Pears were good fruits of Ramillies, Verulam, and Uvedale St. Germain, one fruit of the latter variety weighing 2¼lb. (Hogg Memorial Medal.)

Sir E. G. LODER, Bart., Leonardslee, Horsham (gr. Mr. W. A. Cook), displayed a collection of Apples and Pears, many from standard trained trees. We noticed good dishes of Duchesse de Nemours, Beurré de Nemours, and Olivier de Serres Pears. (Silver Banksian Medal.)

W. SHUTER, Esq., 22, Belsize Grove, Hampstead, N.W. (gr. Mr. J. Armstrong), displayed five stands of Black Alicante Grapes. The bunches, although small, had been well kept, the bloom especially being well preserved. (Silver Banksian Medal.)

Messrs. GEO. MASSEY & SONS, Spalding, Lincolnshire, staged a good collection of Potato tubers in 33 varieties.

Two dishes of Mushrooms shown by Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. E. Beckett), being of nice appearance, were awarded a Cultured Commendation.

Varieties of Apples were shown by Messrs. CROSS & SON, Wisbech, and other exhibitors.

FIRST CLASS CERTIFICATE.

Citrus japonica fructu elliptico. This is the decorative Orange which received an Award of Merit from the Floral Committee at the previous meeting (See our issue for Dec. 23rd, p. 446.)

THE HORTICULTURAL CLUB.

JANUARY 9.—The last meeting of the members of this club before the annual dinner, which will take place on February 14 next, was held on the above date in the club room at the Hotel Windsor, Westminster. The subject for discussion was "British and Foreign Parks—A Comparison," and Mr. Jordan, Superintendent of the Royal Parks in London, read an exceedingly interesting paper. Mr. Jordan gave some details of the principal parks and gardens in Paris, including the famous garden at Versailles, which belong to the State; also the Bois de Boulogne, Champs Elysées, and other open spaces which are managed by the City of Paris Parks Department. The management of these latter parks was described as first-rate, and the glasshouses for purposes of propagation and for the protection of tender plants all that could be desired. These and other necessaries were provided for the department at a cost of £100,000. Turning to Brussels, Mr. Jordan said that the parks there were scarcely so interesting, and remarked of the Botanic Gardens that they were patronised by the near residents as a pleasure ground pure and simple, but the Garden contains some very valuable and rare plants. Laeken was referred to in greater detail, and a tribute was paid to the enthusiasm King Leopold has always shown for gardening. Mr. Jordan admired the methods of planting the grounds, for good breadths of different species were planted in groups, and such shrubs as Magnolias and others are thus exceedingly effective. In Vienna the parks are well kept, but all of them are not free from a rather low form of entertainment. The boulevards are very fine, and Roses succeed particularly well in the gardens. After a few remarks about Buda-Pesth, Mr. Jordan described Berlin as the cleanest and best city he had visited. There was neither abuse nor destruction of public property there, and, as a park superintendent, the lecturer feelingly attributed this excellent state of things to the Berlin populace having been taught unusually good discipline when they were children. There were no notice boards and no boundaries needed! Further remarks were made upon Potsdam, the Palm Garden at Frankfort-on-the-Main and the wonderful carpet bedding there; also on the gardens at Cologne, &c. Mr. Jordan having visited all the places mentioned, was able to offer some criticism on the various foreign parks from the point of view of a specialist who has had wide experience.

The second part of the paper dealt with the parks in this country. It was pointed out that in London the Royal Parks, under the management of the Commissioners of H.M. Works, numbered 21, and comprised nearly 6,000 acres. Those under the City Corporation, including Epping Forest, amounted to over 6,000 acres; the London County Council had 95 parks, which, together, comprise about 4,000 acres. Including these and a few belonging to other authorities, there are in London 224 parks, which include 17,956 acres. Interesting particulars were related of Greenwich, Hyde, and the Green Parks, and of the alterations that have lately been made in the Green Park; also of tree life in the parks, showing that the Elm is longer lived in London than is the Oak. The magnificent parks and gardens in Edinburgh were referred to, and then Mr. Jordan proceeded to point out some of the contrasts between English parks and those to be seen abroad, in the course of which he lamented the fact that Roses will not succeed well in London, and also that fogs were destructive of some of the best work that is done in the parks; but, on the contrary, the grass in the London parks is always green, and of very much better colour, and it wears better than any lawn grass that is cultivated abroad. A note was sounded as to the danger, as well as the benefit, that may possibly arise from following a good lead, and we gathered that Mr. Jordan very properly considers that it would be a pity if efforts were made to make the Vienna or any foreign and London parks after the same pattern. We need variety even in our parks at home, and, as Mr. Jordan pointed out, an authority when it obtains possession of a piece of land should not endeavour to follow some model, but rather to make the best of the natural features of the site, and thus impart to the place an effect that will be different from other places of a similar character. Credit was given to the L.C.C. for having done this in some of the London parks. In the subsequent discussion, remarks were made by Messrs Assbee, C. T. Druery, Geo. Monro, W. Marshall, White, Simpson, and H. J. Veitch (chairman), &c. Mr. Veitch said Vienna was much the finest city he has seen, and described the shores of the Bosphorus, near Constantinople, in the highest terms of appreciation. The effect to be seen there when the Judas trees (Cercis siliquastrum) are in flower is indescribably good.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 21, 1905.—There was a moderate display of plants at the meeting on the above date.

G. W. LAW-SCHOFIELD, Esq. (gr. Mr. Shill) staged a group of Cypripediums, for which a silver medal was awarded. Cypripedium × Thompsoni was shown in very good form. Awards of merit were granted for Cypripedium × Thalia, Schofield's variety, C. × Stottianum, a hybrid between C. × Lathamianum × C. insigne var. Sanderæ, and C. aureum var. Cyrus superbum.

S. GRATRIX, Esq., Whalley Range (gr. Mr. Cypher) exhibited a splendid Cypripedium × Leeanum var. Gratrixæ. (First class certificate.)

R. ASHWORTH, Esq., Newchurch (gr. Mr. Pidsley) obtained a first class certificate for Cypripedium × bingleyense var. "Œneas."

Mr. A. J. KEELING, Bradford, obtained an award of merit for Cypripedium insigne var. confusa, and a bronze medal was awarded for his group.

O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers) exhibited a distinct form of C. insigne named Clinkaberryanum. (Award of merit.)

Messrs. CHARLESWORTH and Co., Bradford, staged a bright group of hybrids. (Silver medal.)

Votes of thanks were passed to Messrs. Sander & Sons, Mr. J. Robson, Mr. D. McLeod, and Mr. H. H. Clegg for exhibits. *P. W.*

SOCIETE FRANCAISE D'HORTICULTURE DE LONDRES.

January 6.—At the Café Royal, Regent Street, the members and friends of the above society celebrated its seventeenth anniversary. Mr. John Harrison, of Leicester, occupied the chair, and the company was almost as numerous as last year, and comprised Messrs. Thomas Bevan, A. Taylor, Harman Payne, representing the N.C.S., Geo. Coleman, Foster, J. Collingridge, D. Ingamells, of Covent Garden, Otto Hiehle, Brian Wynne, Tucker, Cochrane (of Hurst and Sons), Gaskill (of Cooper, Taber, and Co.), Munson and Cornant (of Carter and Co.), Torkildsen, Cutbush, Duckham, of New York, and many other well-known representatives of the horticultural trade in its various branches.

The Chairman proposed the health of the President of the French Republic, which was followed by the singing of the "Marseillaise." Next came that of "The King," and afterwards a verse of "God Save the King" was sung.

The toast of the evening was that of "La Société Française d'Horticulture de Londres." In proposing this, the Chairman dwelt upon the fact that the society had now existed for 17 years and was really a practical form of the entente cordiale long before the good understanding generally known by that name existed. It was interesting to see such a society make such progress as it had done, for, beginning with only 12 members, it now numbered no fewer than 600. He hoped it would continue to flourish and continue to receive the support of the leading horticulturists in all countries. He welcomed there to-night one from Tokio. He was pleased to see so many young Frenchmen present and also some young Englishmen who had lived in France. He himself had occasion to visit that country at times, and was always received in a kindly way. If there was anything he felt jealous of it was the French climate. Seeing so many young men present, he would offer a little advice, and it would be for them all, whether English or French, to lead steady, honourable lives, to be honest in all their dealings, and to see to it that their word could always be relied on. In ordinary business matters there was no need to give themselves away, but they should be truthful and honourable. The toast was then proposed amid much enthusiasm, coupled with the name of Mr. George Schneider.

Mr. George Schneider, in reply, said their chairman was a man well known and greatly esteemed. He was the head of a large firm in Leicester, and was eminently qualified for the position he occupied that evening, They were all grateful to him for the good advice he had given and for coming among them to preside over the meeting. So far as the society was concerned, it had not been quite so successful last year as it had been in former years, conditions of trade being somewhat less favourable. He then gave various statistics concerning the society, its members, literary and financial condition, and explained that they were in a large degree indebted to many of their English friends. He would ask them to drink to the prosperity of English horticulture and to their English friends and supporters.

Mr. Harman Payne replied, saying that if they had so many friends it was because the society, by its enlightened policy, had deserved it. There had long existed a bond of sympathy between them and the society he represented. The National Chrysanthemum Society and these two societies had laid the foundation-stone of the entente cordiale horticole as it existed to-day. Their prosperity was due in a large measure to their president, who, with the members of the bureau, had made the society what it was. He asked them to raise their glasses and drink to the Bureau of the Society.

M. Verboonen proposed the English Horticultural Press, to which Mr. B. Wynne replied. Mr. T. Bevan proposed a vote of thanks to the chairman. During the evening it was announced that several new honorary members had added their names to the list—viz., Messrs. Witty, Johnstone, Hill, Hooper, J. Collingridge, J. Foster, etc., and that donations of a guinea each had been forwarded by Messrs. Ouvrard, Cutbush, and Messrs. Howcroft and Watkins.

Music and recitations enlivened the proceedings, Messrs. Schneider, Tucker, Gaskill, Taylor, and Verboonen being among the principal performers. A presentation consisting of cutlery in a case was made to Mr. Schneider by the young members of the society for his interest in their welfare.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

January 8.—The usual monthly committee meeting was held at the Royal Horticultural Hall, Vincent Square, Westminster, S.W., on the above date, Mr. T. Winter in the chair. Fourteen new members were elected, and one nominated. Six members were reported on the sick fund. The amount paid out for sickness since the last meeting was £22 19s. Messrs. W. Gunner and T. H. Puzey were elected to audit the society's accounts for the past year.

Obituary.

Harrison Weir.—Not unexpected, but none the less to be lamented, was the death, as briefly announced in our last issue, of this well-known artist on the 3rd inst. To many of our readers he was personally known, to a vastly greater number his name was familiar as the illustrator and author of countless books and papers on natural history subjects, particularly birds. His sympathies were broad. He was genial to all, and to his associates "a fellow of infinite jest, of most excellent fancy." To those who knew him intimately his loss will, therefore, be a severe one. He was born at Lewes in 1824. Like many another boy he was a naturalist in his early youth—self taught and untrained. The preface to a delightful little book of his, entitled "Every day in the Country," contains an illustration showing Harrison with his brother Jenner, as little lads, roaming hand-in-hand together through the woods and admiring the gambols of a squirrel on a branch overhead. Jenner Weir, we may add, who died some few years since, became a well-known entomologist, and was a member of the Scientific Committee of the Royal Horticultural Society. Harrison was apprenticed to Baxter, one of the originators of colour-printing, but soon betook himself to painting, and attracted public attention by his careful and, so to speak, sympathetic representations of birds and animals. He became an exhibitor at the Royal Academy and other kindred societies, but it was as an illustrator of books, newspapers and other periodicals that he attained the widest celebrity. He was one of the first to join the artistic staff of the *Illustrated London News*. This was, of course, before the days of the camera and of "half-tone" blocks. It is beyond the power of computation to estimate the many thousands of persons to whom he afforded delight and instruction in this way. He was a most industrious and prolific artist. But art did not exhaust his sympathies; he was an authority on Pigeons and on Poultry—his latest book entitled "Our Poultry," a work of life-long research and observation, will be the standard text-book for many a year to come. His services as a judge were constantly in request, and he did his best to counteract the inanities of the exhibition-table and to substitute a more reasonable and useful standard of merit. He was the founder of the Cat show and laid down the rules for judging the domestic pet. His little book on the Cat is remembered for its delightful representations of the several breeds of this animal, and the likenesses they suggested to some of his friends.

THE LATE HARRISON WEIR.

To us he was best known as an enthusiastic gardener and lover of florists' flowers. He practised "wild gardening" before the name was invented. He found beauty in the meanest weed. Did such a plant appear in his borders, he did not uproot it, but let it display its foliage and its flowers in such a way that the visitor was often surprised at the elegance of form in what before he had considered as an unsightly intruder. But Harrison Weir's tastes were more catholic, and in his garden at Brenchley, at Sevenoaks, and, lately, at Appledore, he showed his artistic instinct in the selection and arrangement of his plants, and in his appreciation of subtle harmonies of colour in his flowers. He studied, too, the utilitarian side of things. Like his friend R. D. Blackmore, he was an ardent pomologist, as well as a connoisseur in Potatos. In these matters the extent of his knowledge was sometimes only imperfectly appreciated by his fellows, simply because he looked at things from a different point of view from that adopted by the specialist and the professional cultivator.

In addition to all these occupations he found time for journalism. He was a frequent writer in the *Field*, and at one time edited a provincial weekly journal with much ability. To our own columns he was an occasional contributor, and drawings from his pencil have from time to time found a place in our pages. The portrait we are enabled to give shows that if he was a keen critic when occasion demanded it, his judgment was always tempered with such kindliness and good nature that, while we know he made many friends, it is difficult to conceive that he could have had any enemies.

Oliver Tietjens Hemsley.—We regret to record the death of this promising young Kewite, which took place at Lahore on January 6 last. The deceased was the only son of Mr. W. Botting Hemsley, F.R.S., the Keeper of the Herbarium, Royal Botanic Gardens, Kew. He was born in February, 1876, was educated at Dr. White's School, at Turnham Green, and at King's College School, London. When he was 17 years of age, in 1893, he entered the service of the Royal Gardens, Kew, and worked in several departments. As a young gardener he earned the goodwill and respect of all his chiefs, and the results of his application to study was apparent when he gained the highest number of marks in several of the courses of lectures, Chemistry, Physics, Economic Botany, &c. He left Kew in 1898 to work at the Government Cinchona Factory at Mungpoo in September, 1898. In 1902 he was at Delhi where he had much work in preparing for the Durbar. An attack of fever caused him to be invalided for some months, but in October of the same year he was put in charge of the Government Gardens and Zoological Gardens at Lahore. The official reports prove him to have been an energetic and successful superintendent, the new works and improvements undertaken by him being spoken of most highly. A couple of hours after the receipt, by his parents, of the cable-message announcing the death of their son the Indian mail was delivered and a characteristic letter from him was received in which he cheerily wrote about his work and intentions in spite of the fever from which he was then suffering. Mr. O. T. Hemsley leaves a widow and one daughter only seven months old.

THE LATE OLIVER TIETJENS HEMSLEY.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending January 6, 1906 –

1906.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 a.m.			Rainfall.	Sunshine.
	At 9 a.m.		Day.	Night.						
December 31 to January 6.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-foot deep.	At 4-foot deep.		
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr. min.
Means	41	40	47	38	35	41	42	44	Tot 1·14	— 26

THE WEATHER IN WEST HERTS.

A very warm, wet and windy week.—On each day the weather continued warm for the time of year, both during the daytime and at night. On the warmest day the temperature in the thermometer screen rose to 53 degrees, and on two nights the exposed thermometer did not fall lower than 40 degrees—the former being 12 degrees, and the latter 13 degrees, higher than their respective averages for January. The ground temperatures have consequently risen, and are now about 3 degrees higher than is seasonable, both at one and two feet deep. Rain has fallen on all but one day since the year began, and to the total depth of two inches, which is only half an inch short of the average quantity for the whole month. During the same nine days nine gallons of rainwater have come through each of the percolation gauges, which are a yard square. The sun shone on an average for 1½ hours a day, or for about a quarter of an hour a day longer than is usual at this season. On each of the last six days the maximum velocity of the wind has been in excess of the average. The windiest day was the 6th, when for the twelve hours ending 9 p.m. the mean velocity amounted to 21 miles an hour. In the windiest hour 26 miles was recorded—direction W.S.-W. It is now over twelve months since the wind has been in any hour as high as this. The mean amount of moisture in the air at 3 p.m. was 3 per cent. less than is seasonable for that hour. The Winter Aconite first showed an open flower in my garden on the 7th, which is twelve days earlier than its average date in the same spot for the previous 17 years, and, with two exceptions, earlier than in any of those years. *E. M., Berkhamsted, January* 10, 1906.

OUR ALMANAC NUMBER.—Such was the demand for our last issue, that although a larger number than usual was printed, our publisher soon found himself unable to comply with the demand. Means are being taken, as far as possible, to supply the deficiency.

ANSWERS TO CORRESPONDENTS.

American and Colonial Gardening Papers: *A. C. Cornhill.* America: *The Florists' Exchange*, 2-8, Duane Street, New York; *The Weekly Florists' Review*, 520, Caxton Buildings, 334, Dearborn Street, Chicago; *Horticulture*, 11, Hamilton Place, Boston, Mass. Australia: *The Sydney Mail*, Pitt and Hunter Streets, Sydney; *Garden and Field*, Adelaide, South Australia.

Books: *M. & S.* There is no book that fulfils your requirements. You must consult separate works for the information on the propagation of fruit trees, hardy flowering plants, trees and shrubs, &c., &c.

Carnation Leaves spotted: *E. M.* The spotting is the result of the fungus Helminthosporium. Burn the diseased leaves and afterwards spray the plants occasionally with a weak solution of permanganate of potash.

Carnations: *D. & Co.* The plants are attacked by the Carnation maggot—Hylemia nigrescens—a small, yellowish-white grub that is hatched from an egg laid on or in the leaf. The maggot works its way down under the outer skin of the leaf until it finds its way into the shoot, where, eating out the very centre of the stem, it eventually kills it. No dressings or solutions are efficacious in dealing with the pest, and it must be destroyed by piercing the body with a sharp, narrow-pointed knife, or with a stout pin. The work of the pest is mainly observable in young plants such as layers and seedlings, and after the plant has attained a moderate age it appears to enjoy a comparative immunity from attack.

Cinerarias: *Puzzled.* We are unable to give an opinion as to the cause of the failure, not having seen the plants. The degree of atmospheric heat mentioned (50°) is quite sufficient. Have you applied water in excess to the roots of the plants? Examine the leaves for insect pests.

Coleus thyrsoideus: *G. W.* The injury to the leaves is probably the result of a check sustained by the plant. This may have been caused either by a low temperature, excessive moisture, cold draughts, or from fumigating too strongly. We have also seen these plants suffer badly from the effects of fog.

Cucumber: *F. K.* The Cucumber, like the Melon, is a fruit. It is not used for dessert purposes, but that has nothing to do with the question. Rhubarb though used as a fruit is not a fruit, but the petiole (leaf stalk) of an herbaceous flowering perennial plant.—*A Constant Reader.* Instead of fresh lime it would be better to get some old mortar rubble, or, failing this, slaked lime.

Currant Shoots: *W. R.* The shoots are infested with the Currant-bud mite. The best practice will be to take away and burn the bushes which are most affected. Cut the infested shoots from the remaining bushes, and rake away the surface soil from under the bushes, so far as this can be done without damaging the roots. Afterwards top dress the roots with fresh soil. A correspondent recommended on page 330, May 21, 1905, an application of quassia and soft soap as a remedy, applied at intervals during June and July.

Market Gardeners' Society: *Protection.* Apply to the Nursery and Seed Trades' Association, Ltd. Address the Secretary, Mr. W. J. Worrell, 30, Wood Street, Cheapside, London.

Mesembryanthemums: *R.M.C.L., Nice.* Old mortar rubble is a very valuable material for these plants when cultivated in pots. In mixing a compost you might have one-third of this material.

Names of Plants: *A. W.S., Basingstoke.* The Editor cannot undertake to name Carnations nor, any florists' flowers. These should be sent to a nurseryman who makes a speciality of the particular flower you wish to have named.—*R. H.* Calanthe vestita luteo-oculata.—*G. F. T.* Cypripedium × Dauthieri viride. It is a variable form often giving purple-tinted flowers together with those like yours.—*W. S.* 1, Lastrea aristata variegata; 2, Aspidium trifoliatum; 3, Asplenium alatum; 4, Cyrtomium Fortunei; 5, Blechnum occidentale; 6, Polypodium Phyllitidis.—*W. T.* Probably Jacaranda mimosifolia.

Notice to Leave: *Weekly Reader.* You have not given sufficient particulars, but assuming that you fill the situation of under garden, we think that in the circumstances a fortnight's notice either way should suffice.

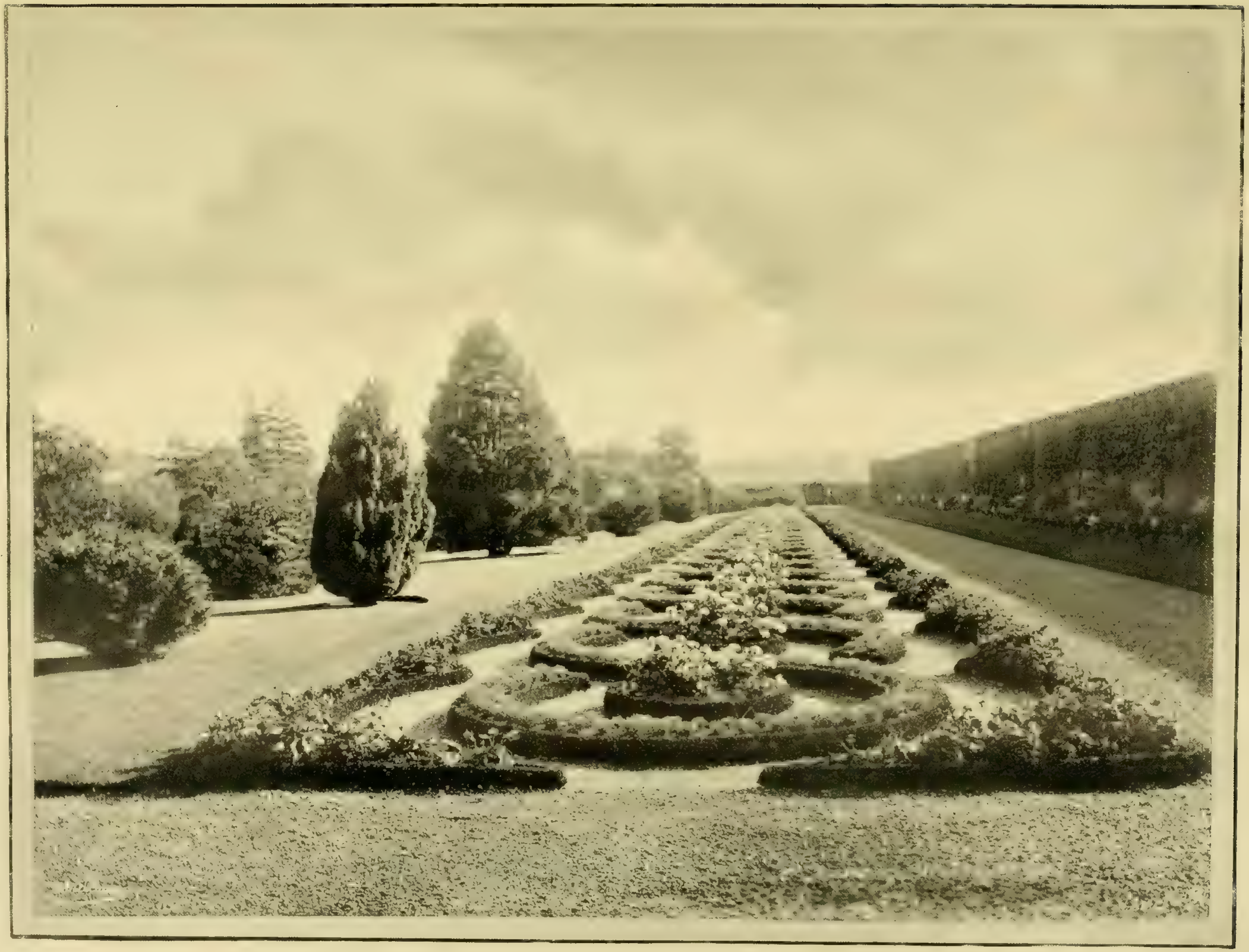
Pear: *Sir J. T. R.* Leon Leclerc de Laval.—*J. B., Bucks.* 1, Wilson's Prolific; 2, Adam's Pearmain; 3, not recognised, send earlier next season; 4 and 5, Cox's Orange Pippin.

Twin Violets: *T. H.* The abnormal condition has been caused by the fusion of the two flower stalks, a not uncommon occurrence in flowers, though we do not remember having seen it before in the case of Violets.

Vines failing: *H. W.* We suspect the trouble arises from the unsuitable condition of the borders, and the Vines themselves appear to be of considerable age. Fungus is present on the roots, but this probably appeared after the roots had perished. The better plan will be to renew the borders and plant afresh. You can remodel a portion of the border this season, and complete the operation next or even the following year, and thus ensure a portion of your crop. Meantime you could furnish the vacant space with pot-vines, which produce good results if given suitable treatment.

Communications Received.—Royal Botanic Society (with thanks)—D. R. W.—A. D.—L. G.—de B. C—G. Grignan—J. R. D.—F. G.—M. P. A. Stockholm—P. C. Pisa—L. G., Brussels—T. F., Magdeburgh—B. Wadds (many thanks, as soon as circumstances will permit)—W. W.—C. Sprenger, Naples.—F. W.—Jeannot (next week)—A. E. M.—M. L.—S. & Sons—J. C. T.—J. W.—C. M.—W. C.—F. S.—W. C.—M. & Sons—A. O.—A. Mc.—H. M.—F. G. L.—T. D.—C. R.—J. J. W.—C. J. E.—H. W. W.—D. R. W.—Dr. H.—F. M.—W. W. & Sons.

For Market Reports, see page **xvi.**



View of a Flower-border at Dalkeith Palace, near Edinburgh,
the seat of the Duke of Buccleugh.

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THE
Gardeners' Chronicle
No. 995.—SATURDAY, January 20, 1906.

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DALKEITH.

(See figs. 18 & 19; also Supplementary Illustration.)

THE present gardens attached to Dalkeith Palace, near Edinburgh, were made during the years intervening between 1840 and 1845 by Charles McIntosh, who was commissioned to do this work by the fifth Duke of Buccleuch, father of the present Duke. The gardens soon became famous, partly because they were then amongst the largest and most up-to-date in the kingdom, but chiefly owing to McIntosh having written one of the largest and most expensive books on gardening in the English language; a book which contained many illustrations, obtained from the new gardens, and much matter connected with them. Gardening, however, at that period of the nineteenth century was being practised at many private residences over the country by young men of superior intellect, and when the end of the decade 1850 to 1860 was reached, the standard of gardening that was common from 1840 to 1850 had been excelled in every direction,

At about 1850 William Thomson was brought from Wrotham Park, Hertfordshire, to succeed McIntosh as head-gardener at Dalkeith, where he remained until 1870. Thomson had shown considerable ability at Wrotham Park, particularly in the culture of Vines, and he soon won for the Dalkeith gardens not merely national, but European repute. This was accomplished by a complete revolution in practice, particularly in vine culture, for Thomson's treatment of vines and his subsequent book embodying the details of that treatment became the standard on which the vastly increased number of cultivators have since based their practice.

The requirements of such an establishment as that of the Duke of Buccleuch are unusually extensive, and the gardens at Dalkeith are therefore of large size, although of less extent than those attached to the Duke's residence at Drumlanrig. The kitchen garden, devoted to the growth of fruit and vegetables, is an area of 12 acres, and the ground occupied by the greenhouses four acres. There are also contained inside the garden walls several acres of flower borders, and a large collection of exotic trees and shrubs. During the period from 1860 to 1870, the gardens were in a better state of cultivation, and were maintained more perfectly, than had ever been the case previously. Dalkeith was then particularly celebrated for its extensive and effectively arranged flower borders, an unusually good collection of Heaths, a large collection of Orchids, a fine collection of specimen stove and greenhouse plants, and its extensive fruit houses, containing large quantities of Pineapples, Grapes, Peaches, &c.

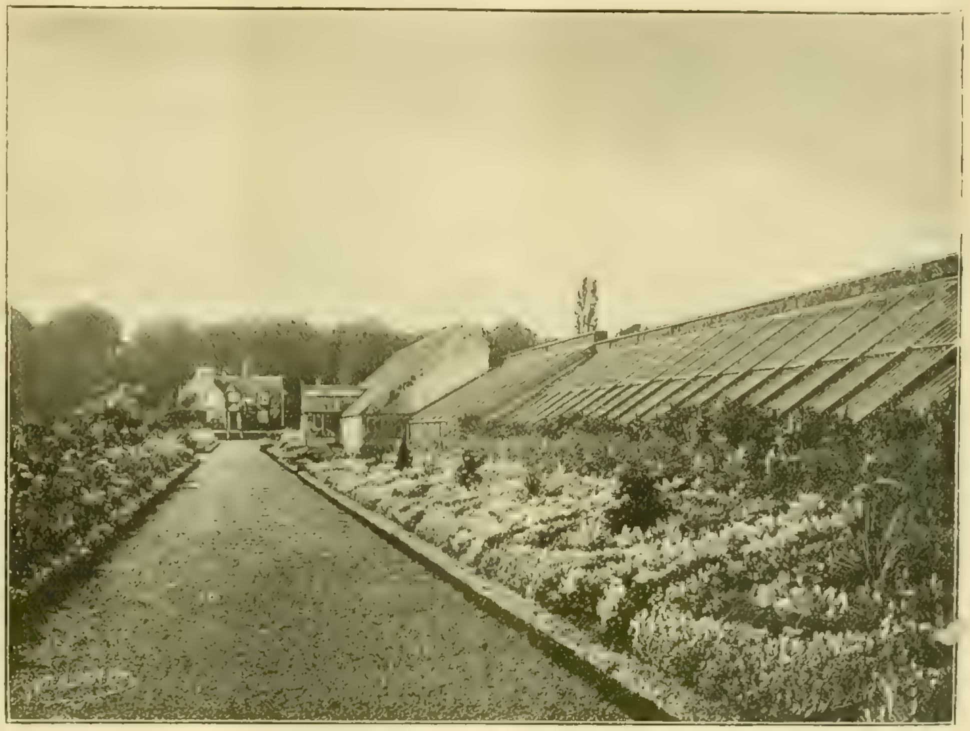


FIG. 18.—VIEW IN DALKEITH PALACE GARDENS, SHOWING GARDENER'S HOUSE IN THE DISTANCE.

In the decade between 1870 and 1880, agricultural depression set in, and landowners having suffered considerably from depreciation in rents reduced the labour bill in their gardens to one-fourth of the former expenditure in some cases and one-half in others. Since the year 1880 only two-thirds of the number of men have been employed in Dalkeith gardens that were engaged formerly.

Malcolm Dunn succeeded William Thomson as gardener in 1871. Dunn was an enthusiast in the cultivation of hardy fruits, and he formed, at Dalkeith, one of the best collections of all out-door fruits in this country. He was equally enthusiastic in Arboriculture, and planted a large number of exotic trees and shrubs. He completed, only a few days before his death, a most efficient system of heating all the glasshouses in the gardens from one centre. The system resulted in a saving of one-half of the fuel that was used formerly, and it has been copied on a large scale in the King's gardens and in other important establishments. Dunn died in 1899, and was succeeded by Mr. James Whytock, who had been gardener to Earl Fitzwilliam for 21 years at Coollattin in Ireland. Mr. Whytock is keeping up the reputation of this fine place and is generally respected by his brother gardeners.

The illustrations in the present issue have been reproduced from photographs taken in September last. At that period of the year the flower borders at Dalkeith are a feature that excites the admiration of all visitors to the gardens. In the first place, they are abundant, and the long stretches of colour produce an effect which is more imposing than can be obtained from less extensive planting. But in addition to the borders being numerous and of unusual size, they are planted in the best manner and with the most suitable plants for producing the effect which is sought, and the plants grow so vigorously and flower so profusely that the visitor is soon impressed with the skilful management to which they are subjected. Begonias are employed unsparingly; there are many thousands of the tuberous-rooted and fibrous-rooted sections raised annually. They enter into almost all of the floral arrangements and they are equally effective everywhere. In the Supplementary Illustration is shown a view of a formal flower-garden 400 feet in length, which of its kind is one of the most effective possible. The small circular beds in the centre of the design were last season planted with a pink-flowered zonal Pelargonium, and the scroll that surrounds each bed contained blue Lobelias. The scalloped margin was planted with tuberous-rooted Begonias and had an edging of fibrous-rooted varieties just inside the box edging. All the intervening space between the beds is kept quite white with a covering of shell. If the visitor were to stand at the end of this flower border shown in the illustration he would see some fine specimens of conifers and other trees on the near lawn, and beyond them on his left a boundary wall which divides this part of the pleasure ground from the park further east. Against this wall, and in the border at its foot on the west side, is a very choice and interesting collection of flowering and other species of shrubs, many of which we were on a former occasion surprised to find succeeding so well in this locality, even though afforded such shelter. The wall shown to the west of the flower garden is utilised for the cultivation of fruit trees. The illustration at fig. 18 shows a broad gravelled path, terminated by Mr. Whytock's residence, which is seen in the distance. On the right hand side is one of the ranges of glass houses, and the border in front of those houses and that on the other side of the path were a perfect blaze of floral colour. The wide border on the left hand side of the picture is 400 feet long, and affords sufficient space for the planting of Dahlias and other large growing plants, in the scheme of mixed bedding. Last season the bold patches of rich blue colour afforded by the very old garden plant Salvia patens were much admired, and the species appeared to us to be growing with greater vigour than is usually the case. In the opposite border—also 400 feet long—there was also a considerable variety of plants, and included were numberless Violas, which flower so much more freely and longer than they are capable of doing in southern gardens, unless extraordinary treatment is given them. A favourite Viola at Dalkeith is one named "Bluebell," having blue flowers and a habit of blooming over a very long period. A view of some of the other houses, which it will be seen are of various forms and sizes, is afforded in fig. 19, and again the striking feature of Dalkeith, namely, its flower borders, is brought into prominence. Almost every glass house is partly surrounded by them, and they are also a conspicuous adornment of the kitchen garden. Those shown in the illustration under notice, being of less width than some of the others, are planted with dwarfer growing plants, which in some instances assume the appearance of true, carpet-bedding.

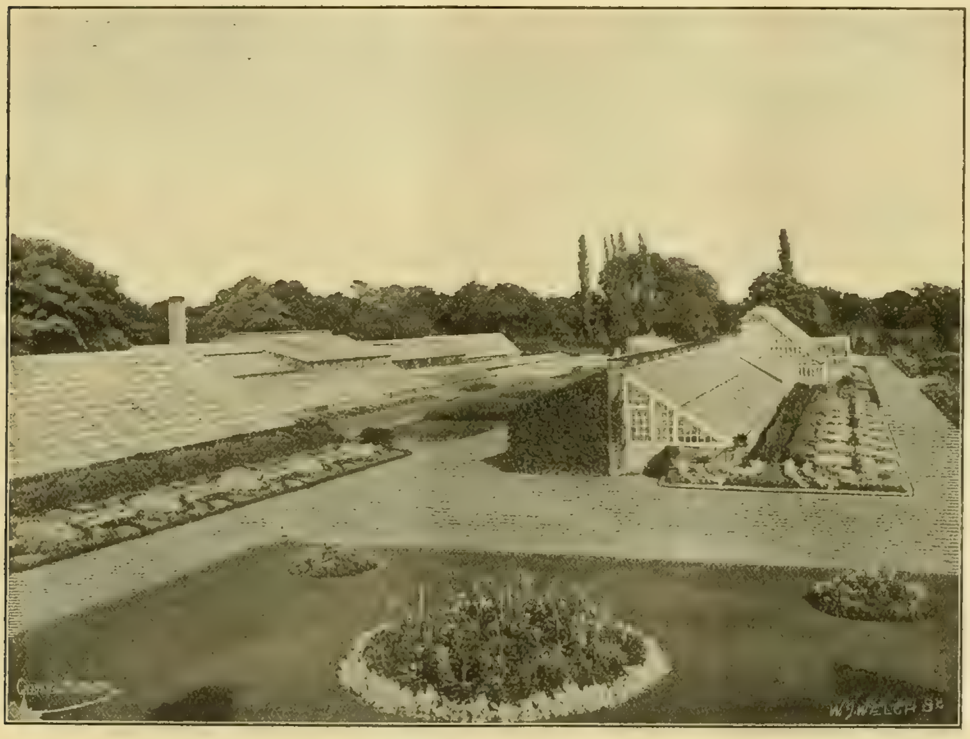


Fig. 19.—View in the gardens at Dalkeith Palace, showing how the glass houses are surrounded with flower borders.

Mr. Pettigrew in the last issue (see p. 28), wrote on the merits of the East Lothian Stock and we can fully agree with his appreciation of the plant, having seen the display of its varieties in the Dalkeith gardens. Last season one of the broad paths which cross the kitchen garden had a line of this stock on either side, and we have rarely seen plants growing and flowering so freely and well. A length equal to 1,200 feet of kitchen garden border was decorated with these Stocks. A similar path which crosses this one at the centre was flanked with lines of Chinese Asters.

The Glass Houses.

It was generally conceded by the visitors to these gardens last autumn that the vines were looking better than for many years past, and there were excellent crops of ripe Grapes, including the varieties Muscat of Alexandria, Sprotboro' Muscat, Trebbiano, Appley Towers, White Tokay, Lady Hutt, Golden Queen, Gros Colmar, Mrs. Pince, Black Alicante, and others. Those of Mrs. Pince and Muscat of Alexandria were perhaps the most remarkable for their unusual weight and good colour. The Sprotboro' Muscat, though regarded by some gardeners as the same as Muscat of Alexandria, is found at Dalkeith to "set" its flowers well in an atmosphere of a lower temperature than is necessary for the better-known variety. In an article by the present writer in these pages on February 1, 1902, p. 82, were given the dimensions of the New Vinery built in 1901 by McKenzie & Moncur, and other particulars relating to the system of glazing by which the panes overlap each other a little at the ends, so that there is ⅛ inch of space between them, the lower one passing under the higher one. There is therefore no "drip" and the air admitted from the top of the house in small quantities is beneficial to the vines. The Grapes, as we saw them in September last, afforded quite sufficient evidence of the good effect of the system. We may add that this Vinery of Teak wood is 75 feet in length, 20 feet in width, and 20 feet in height.

The numerous Peach houses, Plum houses, Fig houses, also those containing Tomatos, Cucumbers, and other crops, of which mention may be made of the excellent collection of fruiting Pines, all bore the appearance of good management, the trees and plants being in a vigorous growing condition and bearing good crops, in the instances where the fruit still remained to be gathered. Such a collection of Pines as is cultivated at Dalkeith can only be seen in very few gardens at the present day, but in connection therewith it should be remembered that in few districts can coal—that expensive requisite—be purchased so cheaply as in that neighbourhood. Strawberry plants are forced in large numbers, and of the varieties that known as Scarlet Queen is the favourite.

In the plant houses we had occasion to admire the well-grown Codiæums (Crotons) and other fine foliage plants, Pelargoniums, Calanthes (very large pseudo-bulbs that ere this have doubtless produced a fine display of flowers), Dendrobiums (which are given moderately cool treatment at Dalkeith), Chrysanthemums, Carnations, tree, border and Souvenir de la Malmaison types; Oncidium varicosum, of which a large number of plants were flowering unusually well, and other species which we must forbear to enumerate.

We might have referred more fully to the well-managed kitchen garden, to the extraordinary collection of fruit trees, the rose-covered trellised walk, the trellis being probably a century and a half old, the magnificent hedge of Scots Roses 100 yards in length, supposed to have been planted by MacIntosh, conspicuous specimens of trees and shrubs in the pleasure grounds, and to the aged oaks in the part of the old Caledonian forest which is included in the pleasure grounds. But our note is already long, and some of these omitted details were published in the article already referred to, whilst a description of the varieties of Scots Roses in the hedge was printed in the *Gardeners' Chronicle*, July 16, 1898, p. 41.

VEGETABLES.

VENETIAN CHICORY.

The *Revue Horticole* recently published a coloured figure of the leaves of this variety of broad-leaved Endive, which is remarkable for its diversity of colours, ranging from yellow to red, in dots, stripes, blotches, or in self-colours. In winter all the leaves become of a reddish-purple hue. It appears that the variety is largely used in Italy, and demands no special care.

PRODIGIOUS "CUTTINGS" OF ELM.

Three years ago, when making some alteration in the garden here I had occasion to remove a large Elm tree, and selected some of its timber for use in making arches for supporting roses. In the following spring five of the posts or uprights started into growth. Little attention, however, was paid to that circumstance, as I had previously seen green stakes when inserted into the ground directly after being cut, show signs of life and then die away; but, to my surprise, in the following spring three of the posts again commenced to grow, and I then came to the conclusion they had made roots. The matter was brought to the notice of my employer, Mr. N. F. Stapylton, and he suggested that it might be considered sufficiently interesting for recording in the *Chronicle*. Not feeling quite sure, however, that they had rooted I waited for a further length of time to see what would be the result. During 1905 the post in the photograph [see fig. 20] with the figure of myself standing near to it, has made growths of three feet in length. The other two have not made so much headway, but are decidedly flourishing. I think, therefore, there can be no doubt but that the posts have made roots. The trunks measure respectively, at two feet from the ground, 15, 22 and 23 inches in circumference. The cause of their growing may be the mild, damp atmosphere of Devonshire and the drizzling, wet summers of 1903 and 1904. *W. Foote, The Gardens, Redworth, Totnes.*

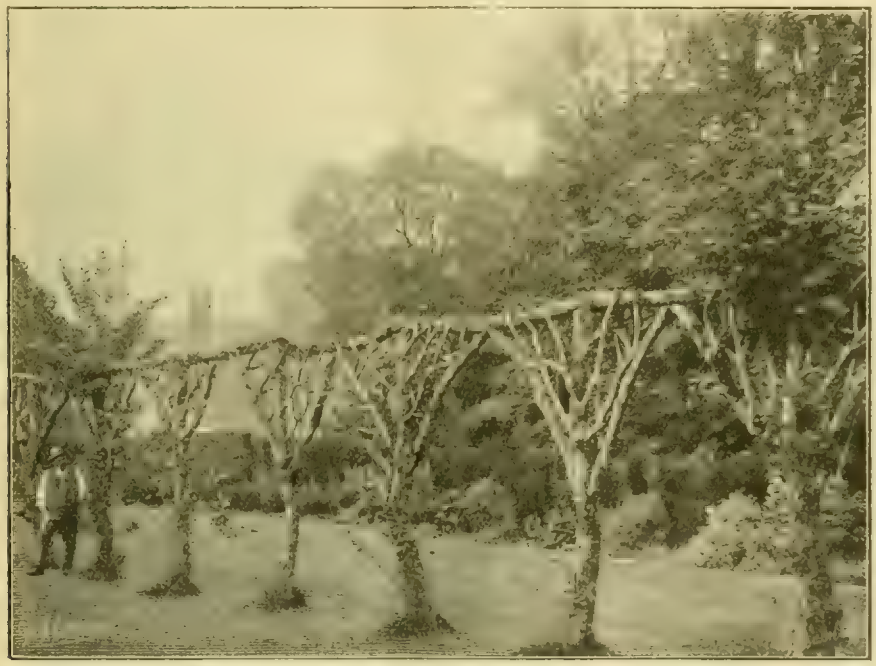


Fig. 20.—Elm branches which have rooted

KEW NOTES.

Jasminum Maingayi, Clarke.

A tropical species that was discovered by Dr. A. C. Maingay in Penang many years ago, but which has not yet found its way into general cultivation. The plant now in flower was obtained from Messrs. F. Sander & Co., of St. Albans, in 1900, and flowered in the Water-Lily house at Kew in the following year, being then figured in the *Botanical Magazine* (*tab.* 7,823), since which time many plants have been distributed from Kew, especially to foreign botanical gardens.

The plant in the Lily-house is a large one, carrying a profusion of flower-heads; it is planted out in a border, and this appears to be the ideal treatment for producing a mass of growth and flowers.

J. Maingayi belongs to the simple-leaved section of the genus; its habit of growth is that of a slender scandent shrub, the branches are short and wiry, nearly all being terminated by a many-flowered head of white flowers, measuring about 3 inches in diameter. The leaves are of very deep green colour, of a hard, horny texture, ovate-acuminate, and entire on the margins. The corolla tube is 1 inch in length, and the limb rather more than an inch in diameter; the number of segments varies from 7 to 10, though usually there are 8.

This is a useful species as a pillar-plant for an intermediate-house, or stove, the flowering period being so prolonged; the new plant has been growing and flowering since July last. *W. H.*

Solanum giganteum.

The genus Solanum is a very large and varied one, some 750 to 1,000 species having been described. Introduced as long ago as 1792 from India, the plant under notice is a very bold and handsome plant for the adornment of large greenhouses and conservatories, also for use in sub-tropical gardening. Several plants 4 feet to 5 feet in height are flowering in No. 4 greenhouse in 8-inch pots. The flowers are of pale blue colour, small, terminal in a compound cyme, branches developing later immediately below the cyme. It is said to grow to a height of from 16 feet to 20 feet in its native country, with a stem as thick as a man's arm. It can be propagated by seeds or cuttings. For sub-tropical bedding sow the seeds in autumn or early in January, growing the plants on in an intermediate house. It is figured in the *Botanical Magazine*, tab. 1,921, where its native country is stated to be the Cape of Good Hope, but this is evidently an error. The *Index Kewensis* gives it as India.

Hippeastrums (Amaryllis).

One of, if not the brightest patch in No. 4 on the last Sunday in the old year was a small group of five Hippeastrums, carrying in all about 20 fully expanded flowers. The bulbs were started into growth in the second week in November. Four of the five plants had light-coloured flowers, two of them seedlings flowering for the first time. The Kew strain of Hippeastrums have previously been conspicuous for the fine rich red hybrids of the "Sir William" type. More recently attention has been paid to the lighter forms, as well as the still further development of the shades of red.

Rhododendron præcox.

This hybrid Rhododendron, the result of a cross made by Mr. Isaac Davies, of Ormskirk, in 1860, from a cross between R. ciliatum and R. dauricum, is a gem for flowering early under glass. With only a little forcing it can be brought into flower by Christmas. A number of large plants in pots are covered with rosy-purple flowers in No. 4 greenhouse. Grown in these pots for three years, they are placed in a warm greenhouse after flowering to make their growth. During this period applications of manure water, especially cow-manure, are beneficial. In June they are placed in the open air. Planted out in the beds or borders, a good show of flower can be obtained for a year or two in large houses, but unless the position is especially favourable they do not continue to flower so freely year after year as those in pots. Plenty of sun and air are necessary for the ripening of the growths, and for developing the flower-buds for the following year. It flowers so early when planted outside that unless the plants are in a very sheltered position, they are injured by spring frosts in the London districts and farther north. *A. O.*

FORESTRY.

CLIMATE AND FORESTRY.

The comparative merits of the climates of the British Isles and of the Continent (Belgium, France and Germany) constitute a complicated question, which could only be solved by a long series of observations made under similar conditions as to soil. For trees growing in forest masses no reliable data are forthcoming. We have, however, many measurements of isolated trees which afford a fair criterion. Tree growth depends, for a given species, on soil and climate; and of climate the most important features are a heavy rainfall and the absence of cold drying winds in winter. *A priori* in most parts of the British Isles there exists a climate eminently favourable to tree growth. The influence of rainfall on height-growth is well seen in the natural forests of Douglas, this species attaining a great height in the moist maritime region of Oregon, Washington and British Columbia, and gradually becoming smaller in size as its distribution is traced inland. Abies concolor attain 250 feet in height on the Californian Sierras, whereas in the dry interior of the continent it only reaches 125 feet.

Certain species, of course, will not grow well, or even fail to grow at all, in England, either because they do not receive enough heat in autumn to ripen their wood, or else they put forth their shoots too soon in spring, and in both cases are retarded by frosts. Such species are, however, of no importance as forest trees.

Mr. Elwes and myself have collected during the past two or three years an array of facts relating to tree growth, and I am justified in asserting that the growth of many species here equals, or excels, that on the Continent. The following trees, for example, to give a short list, succeed in our climate, make rapid growth, and attain a great height. Amongst Conifers, Scots Pine, Larch, Douglas Fir, Menzies Spruce, Common Silver Fir, Austrian and Corsican Pines; amongst hardwoods, Oak, Beech, Ash, Sycamore, Alder, Black Italian (?) Poplar. These are all useful trees.

With regard to plantations I may adduce an interesting comparison. In Argyllshire, on poor soil, rocky and originally covered with heather, Douglas Fir has made in 23 years, over a considerable area, an average height of 58 feet. This is precisely its record in Germany, according to Schweffech, on an experimental plot where the soil was certainly superior in quality to that of the Argyllshire plantation. We have many similar instances of magnificent growth in plantations of other species.

People may raise objections to afforestation on the economic side; but so far as climate is concerned, I am convinced that it is certainly in our favour. This is the opinion of all the Continental foresters with whom I have talked on the subject. *Augustine Henry.*

THE MAKING OF ORCHARDS.—I.

ANOTHER planting season is with us, and there are no doubt many who at the present time are contemplating the formation of an orchard, either for the purpose of supplying private needs or with a view to obtaining profit. Fruit-growing is undoubtedly a pleasant occupation for those who can afford to sink the necessary capital and take some risks as to the results, but it may be anything but the easy means of obtaining a living that many have suggested it to be. About such an occupation, which depends so largely upon circumstances of climate, soil, situation, and last, but not least, personal ability to undertake a business of the kind, there is always a very large element of speculation, and he who embarks upon it with an idea that it is a simple calling, not requiring a considerable amount of knowledge, is doomed to disappointment and pecuniary loss. Even those possessed of a certain amount of common sense and learning in this particular branch of horticulture have time and again failed to make it pay for various reasons, sometimes through faults of their own, but only too frequently owing to causes over which they had no control. For all that there is not the slightest doubt that many of these causes of failure are attributable to lack of foresight in the first place, chiefly as regards the situation selected for the orchard. It is not good enough in these days, when everything must be of the best if it is to hold its own, to allow anything to be left to chance, and the man who contemplates growing fruit for profit must choose the most suitable situation he can find for his venture. But besides this he must, having decided on his spot, take careful consideration of the kind of trees best suited to his soil and his purpose, for to grow the best crop of Apples, Plums or Pears, of a kind which the market does not want, is just so much time and money wasted. On the other hand, it is useless to attempt to grow popular market varieties on a soil that will not grow them to perfection, for one's trees must bear passably well and be capable of producing quality as well as quantity, if good prices are to be realised. The would-be fruit grower must therefore bear these essential points in mind when selecting his trees and be guided by the opinions of those who have had experience in these matters. A thoroughly reliable nurseryman can generally give the desired information as to which kinds of fruit trees will do well on a particular soil, but one must be careful to go to one who has some reputation as a learned man in these matters, and not to him who will palm off on the unsuspecting purchaser those varieties of which he—the seller—has most in his nursery, and of which he is naturally most anxious to dispose. A better plan, though it is not always feasible, is to enquire in the neighbourhood of one's prospective orchard which varieties of trees thrive best in the locality, and form one's own opinion on the matter. It is not always possible to obtain the names of these local trees, whose labels have probably been lost long ago, but if samples of the fruit and the leaves of the trees can be obtained, any good nurseryman can tell the names of the variety.

The ground and the trees selected (it depends, of course, upon the length of the purchaser's purse as to what age the latter are when he buys them), the next step is the planting. This operation is as important as the selection of soil and varieties, yet it is perhaps the most carelessly carried out of any of the early steps of orchard making. The old plan, which one regrets to see is still observed by the ignorant in all parts of the country, consisted simply of digging a hole and dumping the unfortunate tree therein. It did not matter in the least whether the soil was deep or shallow, wet or dry, clean or full of weeds; nor was any variation made in the size of the holes according to the space required by the roots of the tree. These were twisted round and jammed in in any fashion, the sour soil was thrown in upon them just as it was, and the whole well stamped in with the heavy foot of the planter. And subsequently the owner, waiting in fond expectation for a crop that never came, wondered why his trees did not thrive, and why so many of them, after a year or two's struggle with a cruel fate, gave it up and died. Nowadays, fortunately, we know rather better than that—at least, there are some who do—although the "tree-dumper" is by no means extinct nor likely to be for a long time to come.

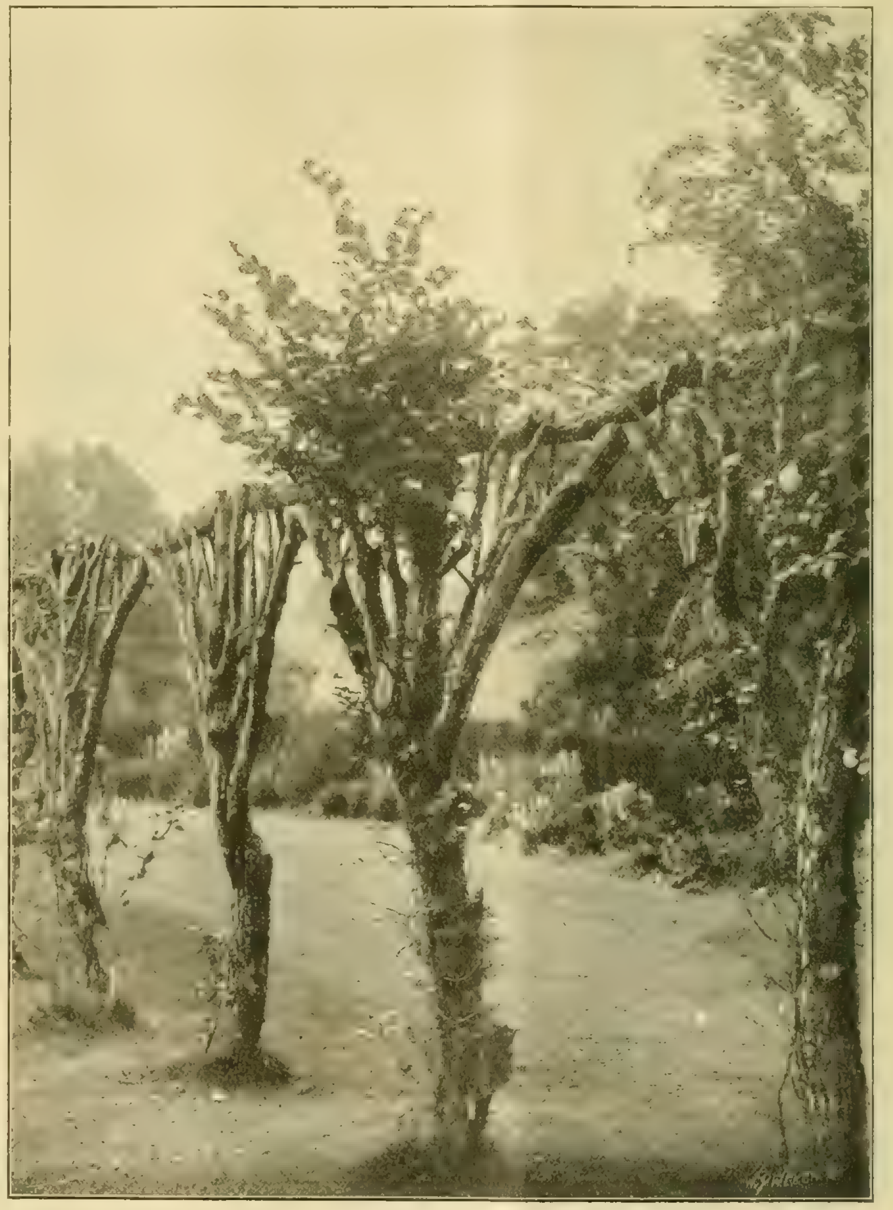


FIG. 21.—A LIVING "POST" AT TOTNES, DEVON.
(For text see p. 35.)

The orchard planter is generally in too great a hurry to get his trees into the soil, with the result that the proper preparation of the ground is not attended to as it should be. This cleaning and breaking up of the soil ready for the trees is one of the most important steps towards the ultimate success of one's labours, for if the ground is not thoroughly clean to begin with it is almost impossible to get it into proper order afterwards. Added to this, work of this nature amongst a lot of trees is always more difficult and more expensive than it would have been before they were planted. To get the ground properly cultivated, horse tackle will be necessary, and a horse or two with harrow or hoe attached cannot be said to be conducive to the welfare of the trees. The horse, indeed, is best kept out of the orchard after the trees are once planted, for never mind how careful the man or men in charge of him may be, it will be almost impossible to prevent some injury to bark and branches. It will be far better to postpone one's planting till the following season if need be than to put the trees into a piece of land only partially ready for their reception. The summer is usually the best time to clean the ground, as it then is a comparatively easy matter to get rid of weeds, but it is of course possible to clean the land at other seasons of the year in the absence of excessive rain or hard frost. The ground that is to be planted will in any case be all the better if it can be left fallow in a rough state for a season before it is wanted, but it is not actually essential that this mode of procedure should be adopted except in cases where the land is very foul. A field that has been regularly cropped with corn or roots is practically ready for planting so soon as it has had the plough over it twice, followed by the harrow, but it is more often than not that the field selected for the orchard is laid down to grass. Such a crop is about the worst possible to go before fruit trees, though no doubt it will surprise many to be told so. There is an idea deeply ingrained in the mind of nearly every Englishman that an orchard should consist of trees planted in grass, but never was there a greater mistake committed. Not only is grass the worst possible crop to associate with young fruit trees when planted, but it is also one of the worst possible crops, even when entirely broken up, to precede fruit trees. Pasture land is full of all sorts of injurious insects, which have for years bred and multiplied without disturbance, and unless the grass crop can be thoroughly and entirely broken up and the land repeatedly cultivated for at least two seasons before the trees are planted, an orchard should never be contemplated in such a situation. Meadow land is all very well under trees when they have attained a vigorous growth of 10 or 15 years, during which time the grass must be kept a long way back from the roots of the trees, but under such circumstances a meadow is not particularly useful and the cost of keeping the grass from encroaching on the cleared spaces around the trees is so great as to be well nigh impracticable. It is really much better not to plant in meadow land at all, but, if it must be done, then there must be a clearing round each tree from the very beginning and the clear space must be enlarged every year as the roots of the trees spread outwards. The admission of sheep or cattle to eat down the grass between the trees is impossible unless one goes to the great expense of wiring in each stem in the case of high standards or of the whole tree in the case of pyramids or bush fruit. Such expense as that cannot be contemplated, and the only possible use of the grass will be as hay. Here we are faced with another difficulty, for to mow and cart the hay, horse-tackle will probably be necessary, and damage will be done to the trees unless they are planted at ridiculously wide intervals. It will, therefore, be seen that the association of fruit trees with meadow land is a mistake from every point of view, unless indeed the idea of the planter is picturesqueness rather than a crop of fruit. Even this effect will not be obtained unless the grass is kept well away from the trees for the first few years of their growth, for, failing that, the trees will never grow out at all, and many of them, probably the majority, will die. Scores of such instances are to be seen in all parts of the country, and the writer has in his mind's eye at the moment a couple of orchards in Sussex, planted respectively 12 and 15 years ago, both of which are practical illustrations of the folly of planting fruit trees in meadow land. In both instances about 30 per cent. of the trees died within the first five years after planting; and none of them in all these years has made more than three feet of growth in any direction. Half of them are cankered and diseased, and the few bushels of fruit that they have produced could never command a sale. They have been a dead failure all round, and after involving their owners in a loss of several hundred pounds, they are not worth cutting down for firewood. *East Sussex.*

(To be continued.)

NOTICES OF BOOKS.

NEW CREATIONS IN PLANT LIFE. An Authoritative Account of the Life and Work of Luther Burbank. By W. S. Harwood. (Macmillan & Co.)

THIS book, written by one who appreciates most highly both Mr. Burbank himself and his work, contains a general account of his methods and results, with descriptions of several of his most remarkable "creations." The first chapter is devoted to "The Man," giving a brief account of his early life and struggles, but ever showing a determination to follow and succeed in carrying out the inherent bent of his mind. His aim was (1) the improvement of old varieties; (2) the union of wild with cultivated types; (3) the creation of new forms. Breeding and selection were the two main processes, trial and quantity being practically unlimited. Thousands upon thousands were bred of one kind or another to select from, but of which one or two only might satisfy him; then all the rest were burnt to make way for fresh thousands for trial.

With regard to native grasses, the author says: "Mr. Burbank has been studying for a long time the question of providing a rich, nutritious grass for barren regions." This suggests questions not answered in the book, viz., what ingredients does he put into the soil, and what is the geological nature of the sub-soil? How is it possible to raise a "nutritious grass," capable of continuing such, in a barren region? For the nitrogen required is not supplied by the air, though the author seems to think a tree "has the capacity to take so much nourishment from the air."

With regard to his crosses, some are peculiar. Thus, (a × b) × (c × d) is stated to have given certain forms required. A Poppy's pistil may be quartered, and each quarter separately pollinated, giving rise to an annual, a perennial, a crimson, and a white progeny. This is analogous to other cases, where white eliminated either the red or yellow of an orange-coloured flower, as of Abutilon and Rhododendron javanicum.

Remarkable crosses are reported to have been made among the Rosaceæ, not only between members of the same tribe, as between Blackcurrant and Raspberry, the Plum and the Apricot, or "Plumcot," said to be a delicious product, and the "Primus" berry, between the Californian Dewberry and the Siberian Raspberry; but he is stated to have succeeded in crossing members of the Rubeæ and Pomeæ, viz., the Raspberry and Apple, of which "the Blackberry seeds of the cross produced the Apple-tree growth!" But of four to five thousand trees all but two were barren. A Raspberry and Strawberry cross (i.e., of the tribes Rubeæ and Potentilleæ) resulted in plants bearing tall stems (3 to 5 feet), but with Strawberry characters. It also was barren.

Mr. Burbank shows that there is a close parallel between the effects of grafting and those of crossing. Speaking of new "species," used in a general sense, Mr. Burbank says: "Crossing makes perturbations or variations and new combinations of these forces, as well as a radically changed environment; both of which produce somewhat similar results."

Two chapters deal with "How may I do it, too?" One is on "Breeding," the other on "Grafting." In the latter are some interesting observations on the effects of the scion on the stock, as in strengthening the roots, etc. As an example, Mr. Burbank grafted a Japanese Pear upon a Bartlett Pear. The cross between them took on a greatly increased vigour.

A Plum from France was grafted on a Kelsey Plum, but the graft itself, though growing well, bore no fruit. The stock, however, bore French Plums instead, so that "the life of one entered into and transformed the life of the other."

In making selections Mr. Harwood tells us that Mr. Burbank "will choose the very best from 100,000 seedlings with unerring eye in a single day's time." But as his day's work, we are told, is one of 10 or 11 hours—if we say 12—that would be 8,333 per hour, or 140 per minute, or two per second, without stopping for one second during the 12 hours!

An important question for scientists is whether Mr. Burbank can support the Mendelian law. The author says that he "has disposed of it"; but he seems to be confounding true hybrids between well-pronounced species used by Mr. Burbank, and crosses between "varieties" of one and the same species. He refers, for example, to Walnuts, the offspring of two distinct species (English and Californian).

We are not aware that Mendel's law has ever been tested between species, the rule of which is that well-defined hybrids, sooner or later, break up into a heterogeneous mass of differences, which, as the author remarks, "show no regard for law and order." If Mr. Burbank proves anything it is that Mendel's law will not apply to hybrids; just as Galton's will not apply to them.

Mr. Burbank has also refuted Weismann's statement that characters accquired by the "soma," i.e., the vegetative system in plants, are never transmitted, because, he maintained, that any external influence could not reach the germ-and-sperm cells.

Mr. Burbank's experience being mainly with crossings, his hybrids would rather go to support Weismann's contention that the external influence must be impressed on the so-called "germ-plasm."

Better illustrations might be taken from biennial crops (as of roots) and foliage (as of parsley), for numerous forms of these now come true by seed, though they were all primarily acquired by the soma, long before they could flower in the second year, being biennials.

Again, Mr. Burbank is said to have apparently upset De Vries' idea of Mutation; but while the former is dealing with hybrids, the latter is concerned with sports of the "elementary species" arising without any crossing at all.

He touches upon the subject of mimicry among plants, but not with that idea, for he observes, "A study of plants or animals belonging to widely different species and even genera (e.g., Cactaceæ in Mexico, Euphorbia and Stapelia in East Africa), which have been under a similar environment for a long time, will always show a similarity in many respects. . . . . Similar environments produce similar results on the life-forces, even with the most distantly related plants or animals. This fact alone should be proof enough, if proof were still needed, that acquired characters are transmitted." Evolution cannot be explained if it were not so.

It may be added that such is the conclusion the "ecologists" of to-day have arrived at. Prof. Warming thus speaks of Cactaceæ, etc.: "I answer briefly to the question, viz., whether these adaptations to the medium, against loss by transpiration, are to be regarded as a result of natural selection, or whether they owe their origin to the modifying action exercised directly upon the forms by the conditions of the medium. *I adopt this latter manner of result.*"

In conclusion, it may be added that, besides many writers who are most appreciative of Mr. Burbank's remarkable personality and his work, many others are not so affected with "Burbankitis," as they call it, and find fault with certain writers for their effusiveness, partly from their over-zealousness to enhance Mr. Burbank's reputation and partly from want of knowledge. Thus it is said that the spineless Opuntia, which Mr. Harwood attributes to Mr. Burbank's skill, was a variety known before, and was actually given to Mr. Burbank by the Department of Agriculture.

However, as to Mr. Harwood's book, it is very readable, but obviously written with a strong personal feeling of admiration for the Californian experimenter and a complete disregard of what has been done by Knight, Herbert, Rivers, Laxton, Naudin, Dominy, Seden, Laing, and very many others whose results are as remarkable as any mentioned in this book. Astounding statements are made, but little or no corroborative evidence is offered. They may be true, we do not say they are not, but assertion is not evidence. Indeed, if ever a man had occasion to be saved from his too zealous friends it is Mr. Burbank. If we may judge from the examples that have been exhibited here, Mr. Burbank's success in developing new varieties is not more than that attained by other experimenters.

TREES AND SHRUBS.

DECIDUOUS SHRUBS FOR FOREGROUNDS AND SHRUBBERIES.

For this purpose may be recommended :—Andromeda arborea, A. speciosa, A. calyculata, Berberis Thunbergi, Caryopteris Mastacanthus, Clethra alnifolia, Comptonia asplenifolia, Daphne Mezereum, Hypericum, Kerria japonica var., Ononis fruticosa, Potentilla fruticosa, Philadelphus coronarius aureus, Spiræa Anthony Waterer, S. bullata, Tamarix, Vaccinium corymbosum, and Weigela "Eva Rathke."

TREES AND SHRUBS WITH ORNAMENTAL BARK.

The following plants are all of much value :—Acer striatum, Betula alba and its varieties, B. papyracea, Cornus sanguinea, Neillia opulifolia, Rosa sericea, R. rubrifolia, Rubus biflorus, R. leucodermis, R. phænicolasius, R. "Schaffers Colossal," and Salix alba britzensis. *W.A.M.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Vanda cærulea and V. Watsoni.—V. cœrulea should be now in the Cattleya house, and in a position where there is free circulation of air. Fresh air at all times is undoubtedly one of the principal requirements of this beautiful species. The new white V. Watsoni is in flower; it appears to thrive well at the cool end of the Cattleya house; the plants are well rooted in small pots, and are kept moderately moist at all times.

Brazilian Miltonias.—Among these there are many beautiful varieties that are well worth more extended cultivation than they now receive. Such are M. Moreliana atro-rubens, M. spectabilis, M. Lubbersiana, M. Peetersiana, M. candida grandiflora, M. Russelliana, M. Clowesii, M. Regnellii, M. bicolor, M. Veitchiana, M. Lamarckiana, M. Binotii, the new Gatton Park variety of M. Regnellii, &c. Their flowering season is during the autumn months, and the majority of the plants, especially those with creeping rhizomes, have comparatively little rest, for within a few weeks after the flowers have been cut the slow development of their new growth commences. The plants should now be examined to see if any of them need more root-room, as the present time is the proper season for repotting. All of the strong growing varieties may be grown in pots, but shallow pans are preferable for the dwarfer kinds. The receptacles should be made at least two-thirds full with drainage material, consisting of a few large pieces of crock placed over the bottom of the pot, and afterwards well dried fern rhizome. As regards compost, I have tried many sorts, and for several years past the plants have succeeded very well in what is known as American fern (Osmunda regalis) root fibre. This is pulled apart into lumps, and placed firmly among the roots, filling up to within ½ inch of the rhizome of the plant; the space thus left should be filled close up to the base of the plant with living sphagnum-moss made moderately fine by cutting up. Keep the plants elevated a trifle above the rim of the pots, with the base of the bulbs just touching the moss on the surface, so that the young "breaks" that are now commencing to grow will be free from anything that is likely to cause them to rot. Some of the dwarfer kinds, as M. spectabilis, should be allowed considerable rooting space, as the growths rapidly extend themselves in every direction, and any plants that have over-grown their pans or have become bare in the centre may be divided. All useless bulbs and dead roots should be cut away, and the growing pieces made up into neat compact specimens. It is not necessary to retain all the old bulbs, two or three behind each young growth are quite sufficient. In remaking up the specimens, some pieces will be found with but few roots, and these must be pegged down to the compost, as they never succeed unless fixed in a manner that will prevent them from shaking. Wooden pegs made from old bass brooms I have found the best means for securing them till the roots have penetrated into the new material. If it is found desirable to increase the stock of any particular variety, the severed pieces, if healthy, may be placed in shallow pans filled with sphagnum-moss and a little sand, and when growth has commenced pot them up as advised for the others. M. cuneata should not be disturbed now, as the spikes are in course of development. This section of Miltonia will grow thoroughly well in a cool and shady part of the intermediate house, for if placed in a strong light the foliage becomes more yellow than is desirable. For a considerable time after the disturbance caused by repotting, the plants need but little water. If the sphagnum-moss on the surface be damped two or three times each week it will be sufficient, and for this purpose the fine sprayer now generally in use is the most suitable apparatus. A very important item towards success in growing these Miltonias is to see that the numerous small roots now pushing forth are in no way injured or eaten by woodlice or other insects.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to F. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Adiantum Ferns.—Any plants that have been used for house decoration or around groups of Chrysanthemums in the cool conservatory should be allowed to become a little dry at the roots, after which the fronds may be cut off the plants. Examine the drainage, and if it is in a good condition return the plants to a warm house, where they will soon make new growth and be found most useful in forming a groundwork for setting up the early batch of Gloxinias when these come into flower.

Poinsettias.—Let those plants which may have been cut over for Christmas decorations be placed together in a warm, dry position to thoroughly mature and ripen their stems, as they will eventually be used for supplying cuttings. Afford the plants just sufficient water to keep them from shrivelling without starting them into growth.

Pot Roses.—If these have been well cared for, and prepared for forcing, a batch may now be placed in heat, and if given a start in a mild hot bed made of clean leaves and short stable litter the roots will soon become active. The moisture arising from the bed of leaves also will be very beneficial to the young growths, which will under these conditions break much stronger. The atmosphere of the house should not be warmer than 30° at this stage. Air should be admitted to the structure very carefully, seeing that fluctuations in temperature are as a rule productive of mildew, that great enemy to the Rose.

Camellias are found most serviceable at the present season, when flowers for cutting are at their lowest ebb. Chrysanthemums are past, and only the early forced bulbs, &c., are supplying our needs. As soon as the Camellias have flowered, they should be placed in a position in a moderately warm structure to make their growth. They will then flower under natural conditions in the winter season. This is important, for the plants will not stand much forcing at this period of the year without suffering disastrous results.

Chrysanthemums.—The earliest cuttings have made roots, and should be given a position near to the glass, where they may receive all the light possible. Proceed with the potting of those which made roots first; and if any have been rooted in boxes, care should be taken not to cramp the roots by putting them into pots which are of too small a size; failure in the young plants to start away into free growth is often the result of carelessness at the first potting.

General reminders.—Continue to stake up Freesias. The prunings of Privet, if stripped of their leaves and dried, provide excellent material for this purpose. The watering of Primulas, Cinerarias, and Calceolarias should be done carefully. Avoid pouring the water into the centre of the plants. Weak liquid manure, if applied twice each week, will stimulate the plants into healthy growth and induce them to flower freely.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Peaches and Nectarines.—If fruits are required to ripen in May, and the trees in the early houses have not yet been started, this should be done at once, commencing at first with a temperature at night of from 40° to 45°, and permitting a rise of 10° during the day. If the borders appear to be at all dry, a thorough soaking should be given them with tepid water. Syringe the trees twice daily unless the weather is dull or wet, when once will be sufficient. If such varieties as Early Alexandra Peach, Advance, Cardinal, and Early Rivers Nectarines are planted permanently in the early houses they will ripen in the order named, provided the new shoots have matured well, which is doubtless the case if, having been kept free from overcrowding, they have been exposed to the influence of the sun, light, and air during the past summer and autumn months. When I came to these gardens it was found necessary to take down a long range of fruit houses, which contained some large Peach and Nectarine trees, each of which covered a space of about 9 yards wide by 7 yards in length. These trees were very carefully removed to a new range of fruit houses in the month of January. It was rather late in the season to remove such large specimens, but careful attention was given to watering and syringing them afterwards, and they carried good crops of fruit the same year, and in each year which has followed. This experience shows how late Peach trees may be removed successfully if the work is done with care.

Second Peach House.—Let this be got into readiness. Cleanse all the wood and trellis work and paint the trees with a mixture of Sulphur, Gishurst compound, Soft soap (thoroughly dissolved), clay and a little soot, all of which should be mixed together to the consistency of paint. Brush the mixture well into the crevices of the old wood. Top-dress the border with loam and lime, adding short cow manure to finish off with. There is nothing gained by allowing the fruit bearing shoots to be trained too closely together; a distance of 5 or 6 inches apart is best.

Pine Stove.—This structure will now demand attention, as early fruits are always appreciated. Cleanse the house thoroughly and make up the bed with fresh tan or good Oak leaves, making them firm by treading, and when the bottom heat has fallen to 90°, the pots can then be plunged into the bed. Always select for the earliest batch those plants having the stoutest stems. Before water is applied to the roots let it be warmed to a temperature of 85°. The atmospheric temperature at night should be 65°, and a rise of 15° may be allowed during the day. Damp the walls and paths occasionally on fine days, and admit a little air to the structure when the weather is favourable.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Currants and Gooseberries.—Keep a sharp lookout for the birds, or at this season they will destroy many buds. Where birds are troublesome, lose no time before trapping them, or as a preventive cover the bushes with fine mesh netting, or dust them with lime in the morning when the branches are damp. If netting is put over them, let it be raised sufficiently high that other operations may be carried on conveniently, such as pruning and mulching. If some long poles be put into the ground, leaving a length of about 6 feet above, and on the top of these some pieces of deal be nailed crossways, strong twine can be strained for the netting to rest on. Peg the sides down to the ground, so that the birds cannot get under the netting. This may then be left in position until the fruit is gathered, and it will by that time have served a double purpose.

The Pruning of Bush Fruits should be pushed forward during suitable weather. Gooseberries against walls are generally grown on the gridiron style, that is, partly horizontal and partly perpendicular. Good crops are obtained by this method, and the fruit is more easily protected than when the plants are grown as bushes. Nail in all the terminal leads, which should be at 7 inches apart, and prune the spurs back to about three or four eyes.

Standard Gooseberry Trees should be secured to a strong stake in order to keep them upright. and afford protection against wind. Thin out the growths only, and do not shorten them. This method not only looks well, but produces fruit of the best quality.

Gooseberry Bushes should be merely thinned out, leaving the remaining branches intact, and cutting back those not required to one eye; this will produce a strong shoot for the succeeding year. Bushes pruned in this manner bear well, and the fruit is easy to gather. So long as strong, healthy shoots can be obtained good fruit will result. If the bushes are getting beyond bounds shorten the branches in order to keep the bush of a good shape.

Raspberries.—It is not too late to plant Raspberry stools, but if this is done the plants should not be allowed to fruit in the present year. The ground should have been well trenched and plenty of good decayed manure mixed with the soil. If the canes are to be tied to wires plant in clumps of five or six crowns together at 2 feet apart; the wires need not be put up this season. If the growths are to be secured to stout stakes, plant three to five, crowns together, at 5 feet apart, and allow 6 feet between the rows. Prune the plants hard back, or even to the ground-line in order to encourage strong vigorous shoots.

Medlars may still be planted. A site in a portion of land where sewage is present suits this tree perfectly. The "Dutch" and "Nottingham" are good varieties.

Fruit-room.—Keep a keen eye on the fruit stores, and collect all decaying fruits. Admit air daily, and keep the atmosphere cool and dry.

Stocks.—When seeds are sown for producing stocks for budding or grafting, always select those that grow most strong and healthy.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

The Forcing Ground.—Such vegetables as Rhubarb and Seakale are in constant demand, and in large establishments there is usually plenty of provision for meeting the supply, but in small gardens it is not so often the case. A simple method of keeping up a supply is by throwing out a trench about 6 feet wide and about 8 feet deep in the frame ground, and filling this with hot dung, planting over this in the usual way and covering with boards, afterwards putting more dung on the top. Splendid produce can be had by these simple means. Cover up Rhubarb crowns in the open with long litter, which will hasten the growth by a fortnight (see also p. 46).

French Beans.—The forcing of these will now be an easier matter than it was earlier in the winter. I prefer to use flat pans instead of deep pots at this season, as Beans sown in January do not require very much soil owing to the comparative small amount of roots they make. The water drains away more rapidly and the plants are therefore not so liable to "damp" when placed in a close and warm atmosphere. About eight seeds are sufficient to sow in a 10-inch pan, and there is no need to make allowance for top dressing in filling the pans, as the stems will not throw roots with sufficient freedom to make it worth doing. The pans, therefore, are best filled up to within an inch of the rims. When making sowings later in the season the deeper the pots used the better it will be, for there will then be no fear of failure from the causes already mentioned. Of varieties I like Osborne's Forcing, to be followed by Ne Plus Ultra and Canadian Wonder. The dwarf Sugar Bean may be quite easily forced in the same manner, and it makes an excellent "dish."

Seakale.—The mushroom house offers most suitable conditions for blanching Seakale, but if a little bottom heat can be given the Seakale will need less time to become fit for consumption. Excellent produce can be grown in deep frames with a hot bed underneath, keeping the light excluded by a covering of heavy mats or a good thickness of straw. In any case the plants need much atmospheric moisture, this having the effect of increasing their tenderness. Rich soil is another point that must be insisted upon.

Chicory.—Treat this in the same way as Seakale, and to maintain a supply introduce fresh roots as necessity requires. If they are grown in frames, place 6 or 7 inches of light soil over the crowns, to induce solidity of growth. The main crop of Seakale and Chicory may be lifted, if this has not yet been done, that the roots may be trimmed and stored ready for forcing. A few of the best crowns should be selected and planted closely behind a north wall and blanched with leaf mould so as to prolong the season as far as possible. Cuttings of Seakale should be prepared at the time of lifting in readiness for planting later on, laying them in bundles in any spare corner free from frost.

Endive.—Continue to lift Endive from the open garden, and place the plants in frames. Blanching can easily be done, either by covering with freshly gathered leaves or tying the outer leaves over the inner ones, keeping the frame dark. The plants may also be easily blanched in any dark shed, mushroom house, or outbuilding, but the atmosphere must not be heated or the plants will damp off.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

The "Annual" Flower Garden.—Having endeavoured to suggest a few seasonable preparations for the summer bedding, I will now draw attention to "annuals." The garden, if it is devoted mainly, but not exclusively, to hardy and half-hardy annuals, should by this time be completed, so that the soil will become mellow and settled by the planting and sowing season. If there is any re-modelling or there are any alterations of beds and borders yet to be done, let the work be pushed forward without delay. Remember that small beds measuring three or four feet wide are best for the dwarfer annuals, especially when each bed is devoted entirely to one kind. Larger annuals may have larger beds, so that they will not be cramped or have their individual beauty impaired. It is essential also, in order to make the most of the "Annual" Flower Garden, that a few borders should possess sufficient width and breadth to afford scope for the exercise of good taste in bringing together annuals of different colours, shades of colour, and habit of growth. As for the parterre bedding system, it is equally necessary for the Annual Flower Garden that plans should be made of the contemplated displays and effects for the coming season, so that the half-hardy flowers to be used in its decoration should be propagated at the proper time, exactly in the quantities required for planting out. If this is not done, there will either be an insufficient supply of certain plants or, almost as bad, much precious time will be wasted in pricking out or potting off a quantity of plants the ultimate consignment of which will be to the rubbish heap. In preparing one's plans inspect the collection of seeds saved last autumn and note the requirements, so that if necessary seeds, especially those of half-hardy annuals, may be ordered without further delay. No collection of half-hardy annuals should be without the following plants:—Asters in sorts, Abronia umbellata, Alonsoa Warscewiczii compacta, Anagallis grandiflora Phillipsii, Arctotis grandis, Antirrhinum—particularly self-coloured pink and red varieties—Browallia, Catananche cœrulea, Marguerite Carnations, Commelina cœlestis, Cosmea, Pentstemon (pink shades), Diascia Barberæ, Delphinium, Queen of the Blues, Dianthus Heddewigii, Gaura Lindheimeri, Petunia, Hollyhock, Lantana hybrida, Lobelia, Marigold (African and French), Marvel of Peru, Mesembryanthemum tricolor, Mina lobata, Nemesia strumosa (in distinct colours), Nicotiana — particularly N. Sanderæ —Phlox Drummondi (in distinct colours), Rhodanthe, Salvia farinacea, and S. Horminum, Salpiglossis, Scabious, Schizanthus, the different kinds of Stocks, Tagetes, Verbena, and Zinnia. It will be noticed that some of the above-named plants are perennials, but they are each capable of being treated as half-hardy annuals.

THE APIARY.

By Chloris.

A Review of the Past Year's Honey.—The past season produced varying results. Those who live in places where the soil is gravelly or sandy felt the drought severely, while others who were living on rich loamy soils had some excellent results. Let us hope all have sold their honey profitably. Personally, I am about £8 to the good, and find that during the last six years I have disposed of a little more than half-a-ton of honey and am in pocket £50.

Painting the Hives.—Nothing will bring on disease sooner than dampness, which is the forerunner of dysentery. Before painting, rub the hives well with rough sandpaper, and scrape off any loose paint. Make the first coat thinly, mixing equal quantities of linseed oil and turpentine, and, as the weather is bad at this time of the year, add about an eggcupful of gold size to make it set quickly; about 1 lb. of white lead will be needed for any ordinary hive. Let the colour be thoroughly mixed and strain well before using. If it be necessary to have it coloured, use a little lampblack to produce a slate colour, or sienna to bring about a good stone tint. It is generally best not to use boiled oil as it is liable to blister in the sun. After the first coat put putty in the cracks and lay a strip of old calico, wetted with paint, over the joints, and the hives will be watertight.

Entrances.—Keep these free of dead bees, but disturb the inmates as little as possible.

Feeding.—Those who did their work well before the autumn had become cold will have no fear of starving bees. Others should only slip under the quilts a cake of candy or better still a piece of comb containing honey, and this only in good weather.

Preparing Frames.—In connection with all bee operations it is well to be prepared for the honey season, and I know of nothing which is more carelessly done, when done in a hurry, than fitting up frames with foundation. To produce straight combs should be our object, and to do this it is a very good plan to wire the foundation in. Needless to say the most economical way of fitting up is to use full sheets of foundation for two reasons, one is because, in the long run, it is by far the cheapest; and, in the second, it will secure a greater proportion of cells for worker bees. Cut out a **V**-shaped piece on the top of the foundation in the centre and a piece off the corners [see fig. 22 (1)]. Open the split top of the frame with a wide nail and slip the foundation well through, leaving a piece about ¼ of an inch above the frame [see fig. 22 (2)].

To make the foundation secure in fhe top bar run a hot poker slowly along the split to melt the protruding piece of comb. This done, bore three holes in each side about 2 inches apart. Use No. 30 tinned wire, and after the wire has been drawn moderately tight use an embedder which has been heated in a candle flame, and pass along the wire to make it embed itself in the foundation. About 8 ounces of this wire will be sufficient for 100 frames. In fig. 22 the letters A, B, C represent the strands of wire. When the foundation is wired-in, thinner sheets may be used, otherwise it is not safe to use thinner than that which is eight sheets to the pound.

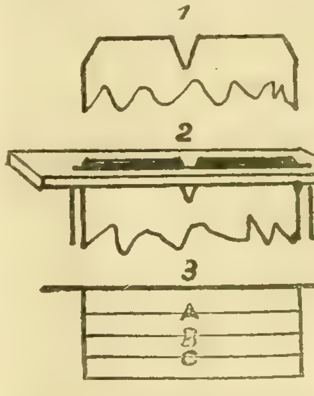


Fig. 22.—Preparing Frames.
(See text.)

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Jan. 23	Royal Horticultural Society's Committees meet.
WEDNESDAY,	Jan. 24	Annual Dinner Croydon Horticultural Society.
FRIDAY,	Jan. 26	Royal Botanic Society meet.
SATURDAY,	Jan. 27	Annual Meeting National Auricula Society (Northern Section), at Manchester. Dutch Gardeners' Society meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—37·9°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, Jan.* 17 (6 P.M.): Max. 47°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Jan.* 18 (10 A.M.): Bar., 29·6; Temp., 49°; *Weather*—Much rain, with high winds.

PROVINCES.—*Wednesday, Jan.* 17 (6 P.M.): Max. 46° Isle of Wight; Min. 39° N. Coast of Scotland.

SALES.

MONDAY NEXT—
Hardy Border and Herbaceous Plants, Lilies, Roses, Azaleas, Fruit Trees, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
Sale of Roses, Lilies, Shrubs, &c., at Steven's Rooms, King Street, Covent Garden.

WEDNESDAY NEXT—
Carnations, Pinks, Hardy Border and Herbaceous Plants, Liliums, Begonias, Gloxinias, &c., at 12. 3,000 Roses and Fruit Trees, at 1 and 3, also Azaleas, Rhododendrons, Palms and Plants, by Protheroe & Morris, at 67 and 68, Cheapside, E.C.

FRIDAY NEXT—
Roses, Azaleas, Herbaceous and other Plants, Perennials, &c., by Protheroe & Morris, at 67 and 68, Cheapside, at 12.

Apple Orchards. THE management of Apple orchards is carried on in the United States not only on a larger scale than in this country but also more systematically. This is well illustrated by a "Bulletin" issued by the Agricultural Experiment Station of the College of Agriculture connected with Cornell University.

The document in question has been prepared by Mr. G. F. Warren and Mr. W. E. McCourt, the last-named gentleman dealing especially with the geology of Wayne County, wherein are situate the orchards principally studied.

The demand for fresh fruit in the States has more than kept pace with the increase of population, so that, in the census year 1900, whilst the population was, roughly speaking, more than seventy-five and a half millions (a gain of 52 per cent. in ten years), the value of orchard products was nearly eighty-four million of dollars (a gain for the same period of over 64 per cent). The growth and development of Apple culture are fully dealt with in a separate chapter, which shows not only how rapid has been the progress but also how comparatively recent was its origin. Tillage, manuring, pruning, spraying, planting, and cultural operations, leasing and renting, all receive attention, as well as information relating to the soils and aspects, the varieties grown, the fungus and insect pests, the markets, and the prices obtained. In order to give a better notion of the contents of this "Bulletin," we may here extract the "condensed conclusion" arrived at by the reporter:—

"Tillage, fertilization, pruning and spraying are the chief factors that enter into good care of an orchard. One or more of these may sometimes be omitted or poorly done without any serious results. To some extent tillage may replace fertilizers, or vice versâ. A thrifty orchard may resist the attacks of disease. In some years there are few insects or fungi, so that spraying is not so much needed. A farmer frequently gets good results from some one of these factors, and becomes so impressed with its importance that he makes a hobby of it, to the exclusion of all the others. But the most successful Apple-grower is the man who keeps a proper balance between all four agencies, and does not expect good care in one respect to make up for neglect in other ways.

"But these factors are not all. The successful man must study; he must learn something of the life-processes of the Apple-tree; he must know the most serious insect and fungous diseases, and why certain treatment is effective in combating them; he must know something of the drainage, humus, and other soil-problems. No set rules can cover all these points. The Apple-grower must go into the orchard and get acquainted with his trees. As one farmer expressed it, he must go into the orchard occasionally, and say to his trees, 'Good morning! Is there anything that you would like to-day?' There are many more or less successful farmers who never really see the Apple-tree—they look only to the crop. Any treatment that will temporarily increase the crop seems to them to be good; but this very treatment may be destroying the prospects for future crops. Nor is success in orcharding wholly dependent on a large crop. There is a business side to the question. Does it pay to grow cheap Apples to be evaporated or to be sold at the lowest market price, or would it pay better to grow a first-class article that costs more but then commands the highest price? A few men in each county are known as growers of good Apples. Some other men grow just as good Apples and yet have no reputation. Sometimes it is because their 'firsts' and 'seconds' all get into one barrel; sometimes it is because the growers are not known. The grower of good Apples should establish a business reputation that will bring buyers to him, and make a competition for his product.

"Last of all, let me urge the advisability of keeping an account with the orchard, and with the other important crops. See which crops really pay. If the Apple orchard proves to be the most profitable crop, then give it first attention.

"The most progressive fruit-grower studies his business, not only in his own orchard, but in every way possible. To keep abreast of the progress made in orchard management, he must know what other orchardists are doing, and must be familiar with the results of experiment station work."

ROYAL BOTANIC SOCIETY.—Dr. FANCOURT BARNES has presented this Society with a cheque for £1,000 from his father, Dr. ROBERT BARNES, in memory of Mr. PHILIP BARNES, one of the original founders of the Royal Botanic Society, and also as evidence of the continuing interest of the family in the society and their confidence in its council.

THE SWEET PEA ANNUAL.—This is the official organ of the National Sweet Pea Society and is in its second edition. It affords evidence of the still growing popularity of the Sweet Pea and contains much cultural information. We note articles on Cross-fertilization and Sweet Peas in Canada, by LESTER L. M. MORSE. Mr. MASSEE contributes a paper on the fungoid diseases of the Sweet Pea. There are many illustrations, and a portrait of Mr. ALFRED WATKINS, president of the society, is given as a frontispiece. Other portraits of well-known growers are also to be found in these pages which are lightened by various poetic effusions. Amid so much that is useful or interesting it is difficult to make a selection, but we shall at any rate be doing a service by repeating Mr. G. STANTON's 12 words: trench deeply, manure liberally, plant thinly, stake quickly, water freely, dispod promptly.

WILLING'S PRESS GUIDE.—This most useful work will be found acceptable to all connected with magazines and newspapers. It supplies a concise and comprehensive index to the Press of the United Kingdom, and it even includes a list of Colonial and Foreign journals. The thirty-third annual edition seems in no way behind its predecessors in clearness and comprehensiveness. It is published at 125, Strand, London.

BRITISH WEATHER CHART.—Mr. JENKINS has again published his Weather Chart for the coming season, and a card calendar showing the days of the week of every day of the month for 25 years. We have no doubt that these will prove useful for reference in many offices and other business places.

WEBSTER'S FORESTER'S POCKET DIARY.—This is a very compact and useful publication, containing many details of importance to all concerned in forestry, as well as a diary and the usual items of information that are sought in a calendar. Here and there some misprints have escaped the proof-reader, particularly on page 21, where several of the names of Fungi are mis-spelt, and it is an oversight to speak of the "berries" of the Laburnum as poisonous. Writing on the question of afforesting waste land the author suggests that the State should acquire and plant suitable waste lands at the rate of 40,000 acres annually for a period of 25 years. The purchase of such land would entail a cost, on the average, of forty shillings an acre. Mr. WEBSTER estimates that for the first 20 years no return will be derived from hillside plantings. From 25 to 40 years an annual return of fully 12 shillings an acre has been forthcoming, whilst the value of the standing crop was found to be about £60 per acre. We commend Mr. WEBSTER's notes on afforesting, and the returns to be expected from it, to the notice of all concerned, and especially to those desirous of finding profitable work for the unemployed, and of turning to ultimate use land that is now practically useless. The book is published by Messrs. RIDER & SON, 164, Aldersgate Street.

THE RAINFALL IN 1905.—That so many gardeners now record and tabulate the climatic conditions prevalent in their gardens, is a sign of the interest and value attached by an ever-increasing number to the proper study and observation of meteorological conditions. Although these conditions vary from a multitude of causes, they form a valuable guide, nevertheless, especially when conducted over a number of years, such as, for instance, those recorded in the old Chiswick Gardens of the Royal Horticultural Society. It is curious and instructive to notice with what great regularity the "means" of a period of over 40 years taken in these gardens ascend and descend in the recorded scale according to the season of the year. Many of our readers have kindly forwarded to us the record of the rainfall in their immediate neighbourhood for the past year, and though our limited space will not allow of these being given in detail, we have pleasure in appending the totals. Mr. H. Harris, The Gardens, Denne Park, Horsham, Sussex, records 27·66 inches, with the remark that 2·84 inches fell on the first seven days of the new year; Mr. C. A. Bayford, Shugborough Gardens, Stafford, registered 23·78 inches; Mr. J. B. Lowe, D'Abernon Chase Gardens, Leatherhead, registered 23·46 inches, as against 24·68 inches in 1904; Mr. A. B. Wadds, The Gardens, Paddockhurst, Sussex, 27·51 inches. Paddockhurst enjoyed 1,469 hours of bright sunshine, recorded on 236 days. The wettest day in these gardens was June 6, when there were 1·22 inches of rain. Mr. W. J. Short, Freeland Lodge Gardens, Woodstock, sends 23·98 inches as his recorded total, against 26·37 inches in 1904. Warwickshire was apparently drier than most counties, for only 21·63 inches fell in Hampton Manor Gardens, Hampton-in-Arden. Mr. Neil Sinclair in his note says: "The greatest fall during 24 hours was on July 1, when 0·94 inches fell." The highest amount of sun-heat was on July 11 and 25 when the thermometer stood at 130°. The highest shade temperature was 80° registered on June 22, the lowest 14° on January 20. Mr. W. A. Cook, Leonardslee Gardens, Sussex, records 147 wet days, during which period 24·74 inches of rain fell, almost identical with 1904, when 24·80 inches were registered. The average rainfall in these gardens for the past 12 years is 28·30 inches. The maximum temperature was 139° on July 27. The highest night temperature was 64° on July 2. The highest temperature of the soil was 65° on July 15, which high temperature continued until August 4. Mr. H. Wilson, Cole Orton Hall Gardens, Ashby-de-la-Zouch, recorded 22·27 inches, the wettest month being August when there were 3·30 inches of rain. The number of wet days in these gardens totalled 179. Mr. John Jeffery, Idlerocks Gardens, North Staffordshire, registered 134 wet days, during which period 26·65 inches of rain fell. August was also the wettest month in these gardens, the fall during that month amounting to 5·06 inches. It is interesting to note that the amount registered during 1904, viz., 26·16 inches, approximated to that recorded during 1905, but the number of wet days in these gardens last year was 134 compared with only 107 in 1904. Mr. H. Parr sends the record of rain falling in Trent Park Gardens, New Barnet, Herts., as 26·5 inches. Mr. James Smith, F.R.Met.Soc., Crathes, Aberdeenshire, has compiled some interesting meteorological notes. Had it not been that November was an abnormally wet month, with a rainfall of 9·41 inches, instead of an average of 3·34 inches, the past year would have been the driest recorded at Crathes since observations were commenced in 1900. At certain periods of the year water was exceedingly scarce, old springs dried up, and gravitation supplies failed. Many persons had to cart water from a considerable distance, not only for live stock but for personal use. The rainfall for the district was 28·6 inches, the number of rainy days being 218.

Bulletins d'Arboriculture, etc.—We notice with much regret an announcement that the December number of this useful periodical is to be the last. It was founded in 1864 by four of the professors of the Ghent School of Horticulture—four men of great enthusiasm, activity, and intelligence. They constituted what was familiarly known as the four-leaved Shamrock. One after the other Van Hulle, Pynaert, Rodigas have been called away, till M. Burvenich, the eminent pomologist, alone remains. For some time he continued to edit the publication. At length the death of his son Jules Burvenich, the Curator of the Botanic Garden, to whom the father looked for assistance, has induced M. Burvenich to retire from his post. The note in which he announces his intention is touching, and conveys a feeling of sadness to those among us who had the privilege of the friendship of each of the four professors. M. Burvenich may, at least, look back with satisfaction on his 40 years of labour. Much was attempted and much was done—and well done. It is to us a matter for as much surprise as regret that the Committee of the "Cercle" have decided to discontinue the publication. The last words of the address are "Place aux jeunes," but we do not hear that the young are coming forward to supply the place of their predecessors. Surely there is no lack of enthusiasm and capability in the younger race of Belgians.

The Attractions of Jamaica.—*Jamaica in* 1905, is the title of a "Handbook of Information for intending Settlers and Visitors," written by Mr. Frank Cundall, and obtainable from H. Sotheran & Co., 140, Strand, W.C. The pamphlet gives a favourable account of the climate of the island, and has special reference to the possibilities offered by agriculture and planting in general. An account of the history and geography is included, as well as a large scale map of Jamaica. The Royal Mail Steam Packet Company, 18, Moorgate Street, E.C., forward an attractive time table and description of tours in the West Indies. The beauties of climate and scenery and the pleasures of life in general are recommended both to tourists and settlers in the islands. The same company also publish a handy little pamphlet on West Indian Fruit and Produce that contains some useful recipes.

My Garden Diary for 1906.—Messrs. Sutton & Sons, Reading, again offer their friends a diary full of useful gardening hints for every month, in a very pretty cover, and with a pleasing frontispiece. Implicit confidence may be placed on the cultural notes, and the diary and calendar accompanying them will also be found acceptable to amateurs.

Pictorial Practical Flower Gardening.—This book is one of a series of "Pictorial Practical" handbooks, and should prove as popular and useful as the earlier volumes. The authors, Messrs. W. P. Wright and Edward J. Castle, claim that their work shows concise arrangement and abundant practical illustration, and they demonstrate how even the smallest of flower-gardens may be made beautiful. Certainly the subject is inexhaustible, so that these experienced writers, aided by their many illustrations, are sure of an appreciative public. The publishers are Cassell & Co., Ltd.

Proposed Agricultural Settlement.—Miss Edith Bradley, whose interest in field and garden work for women is well known, is sending out a pamphlet relating to a Scheme for an Agricultural Settlement. This, described in brief, is an estate wherein shall be congregated men and women fully trained in agriculture, horticulture, dairying, poultry and bee-keeping, fruit culture and preserving; who shall rent plots of ground, with or without dwellings thereon, and shall make a living out of the land under the most favourable circumstances of modern up-to-date methods. Capital, labour, and ability are to combine to render such a plan possible. It is proposed that the settlement shall be in the Midlands, in one of the districts or counties that were included in the great Saxon kingdom of Mercia, and the name suggested for it is the Mercia Agricultural Settlement. Co-operation is a great feature of the plan, both as regards the various pursuits undertaken and the domestic economy of the settlement. A bank, sick fund, old age and pension fund are details of Miss Bradley's plans; her idea of expenses being to start with from £10,000 to £20,000 for essentials, and to increase this amount and the general scope of the undertaking as success becomes more assured. Those of our readers who desire to know more of "The Mercians," should write for particulars to Miss Bradley, care of The Studley Castle Agricultural Association. We suppose this address to be sufficient, as none more definite is mentioned in the circular before us.

Checking Wireworms by Means of Fertilizers.—The last issue of the *Woman's Agricultural Times* gives the abstract of a lecture, given under the auspices of the Essex County Council, by Mr. W. J. Moss, on the prevention of injury by wireworm. The speaker discovered that after the use of an American fertilizer-drill of a pattern which sows the artificial manure down the conveyor tube with the corn to the coulters, the resulting crop was notably free from attacks of wireworm. The pest had been checked in a curious manner. The field, when treated, was badly overgrown with weeds; the Barley (which, as it happened, was the crop sown) proved uninviting to the wireworm, owing to the acid in the manure with which it was treated; the pest, being there and hungry, had to feed upon what they could get, and ended by clearing off nearly the whole of the weeds. "Since that time," says Mr. Moss, "I have had no fear of wireworm in a Corn crop. I have simply used a fertilizer-drill and deposited the artificial manure down the coulters with the Corn, and the wireworms have helped to clear the field of weeds. I have not proved that artificial manure is inimical to the wireworm, but this is not important if the presence of the creature can be made to assist in the economy of the farm and the pest be converted into a friend. I believe superphosphate is sufficient for the purpose; but I have found a 'complete' manure the best to adopt and the most economical, as the increased yield obtained invariably more than compensates for the increased outlay."

Royal Horticultural Society.—The next meeting of the Committees will be on January 23. Mr. Martin H. Sutton will lecture at 3 p.m. on "The Formation and Care of Lawns and Golf Greens."

The Fruit Industry.—We have received the following letter from the Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W.: "I am directed by the Board of Agriculture and Fisheries to acquaint you that they have been in communication with the Postmaster-General with reference to the recommendation made by the recent Departmental Committee on the Fruit Industry as to the desirability of the further extension of the telephone system in country districts, and that the Board are informed that for some years past the Post Office has been steadily extending the trunk wire system to small provincial towns, and building up local Exchange systems in rural districts which had previously been left untouched. There has been increased activity in this branch of Post Office expansion since, in March, 1904, Parliament granted additional funds for the development of the telephone system, and it is now in operation in a considerable number of towns. Among other extensions benefiting fruit growers an Exchange system has been established in the district of Swanley, Farningham, Hextable and Crockenhill, also at Westerham, Kent and Winchcombe in Gloucestershire. In some cases the distance of towns or villages from any existing trunk wire centre renders the cost of extensions prohibitive, but as the system of main wires extends, these difficulties will diminish. The Postmaster General informs the Board that he will be glad to receive any specific suggestions as to further improvement which may be submitted on behalf of fruit growers, and also as to the localities where the need of the telephone for the purposes of this industry are most pressing. The Board would be glad if they might be favoured with any information which your readers may be in a position to supply as to particular places where the introduction of a telephonic service would be attended with special advantage to fruit growers, and also to receive any suggestions generally on the subject, I may add that the Board are addressing a similar communication to the principal fruit and horticultural associations and societies.—I am, sir, your obedient servant, (signed), T. H. Elliott, secretary."

Town and Country Life.—The disadvantages of overcrowding cities and depopulating country villages are a constant theme of discussion and constitute a serious problem. The "Garden City" is an attempt to solve the difficulty by ensuring that new towns shall be accompanied by sufficient open spaces to ensure healthful and sightly surroundings. It is not so much room that is lacking, but a redistribution of the town and country areas. "We talk about the stately homes of England," says Mr. Rider Haggard in the "Garden City," "but what I should like to see greatly multiplied are the humble homes of England. It is our duty to multiply those humble homes, and to make sure that the land is devoted to the original purpose for which Providence gave it, for the production of men, women, and children. There is plenty of room for pheasants, but there is also plenty of empty room that can be occupied by men and women." The buildings necessary to accommodate the people should be considered not merely from the standpoint of the individual but from that of the whole population. Instead of the inconveniences inevitable from the gradual growth of old towns, new settlements should start with every possible advantage. On another page of the publication quoted above we read that—"Local conditions—inherited street plan, topography, the location of railroad stations, and many other factors—determine which plan is best for any particular city, but quick transportation demands the development of civic centres with a system of avenues radiating from the business and other important local centres, and towards this end European cities are working. It is also advisable that boulevards should be so planned as to connect the parks of a city." That it is possible, by gradually improving old-established neighbourhoods and by laying out new ones with due prevision, to combine convenience and effectiveness is, it is said, demonstrated at Letchworth. In the Garden City Estate Professor Patrick Geddes considers that: "The union of the claims of the past and present is being happily managed in a way which shows how needless and how wasteful are the proceedings of the ordinary suburban builder, whose supposed sacrifice of beauty to utility and gain is often but the most wastefully extravagant sacrifice by brutish worshippers to a dim ideal, that of mechanical æstheticism, of dreary regularity. Here old trees are preserved, picturesque hedgerows stand undemolished, the common remains with its shady lanes and labyrinths and open glades; its wealth of wild flowers are left to be a joy to the lover of nature, and all this with an economy to the company where your speculative builder usually spends money freely to destroy."

Annals of the Royal Botanic Garden, Calcutta.—A new instalment of this valuable publication has lately been issued. The volume, of which this is the second part, is dedicated to Sir George King, who for twenty-seven years had charge of the garden. The part before us is devoted to a monographic enumeration of the Aconites of India by Dr. Stapf. The importance of being able to discriminate the species is shown by the fact that whilst some species are extremely poisonous others are relatively, at least, innocuous. From this point of view the microscopic anatomy of the tubers is of material value, so that in addition to the external characters of the several species Dr. Stapf has also given details of their anatomical structure so far as is necessary for the purposes of discrimination. According to the differences in the root characters the Aconites are divided into three sections—(1) Lycoctonum, with perennial roots; (2) Napellus, with biennial tuberous roots in pairs—each tuber producing normally one simple or rarely branched stem; (3) Gymnaconitum, with annual fusiform roots. The descriptions are very elaborate, and a great deal of information is given as to the geographical distribution of the species, the vernacular names and the properties of the several species. A very copious bibliography, a list of the vernacular names, and an index complete a monograph which is further illustrated by 24 quarto lithographic illustrations drawn by Miss Smith. Lt.-Col. Prain (the new director of Kew) supplies an account of the life of Dr. Buchanan Hamilton, who succeeded Roxburgh as superintendent, and was himself followed shortly after by Wallich (1816). The letters here printed are of great botanical interest. During his residence in Nepal he collected largely, and his specimens formed the basis of Don's Prodromus Floræ Nepalensis.

Refrigerating Apparatus.—The students of the West of Scotland College of Pharmacy, says the *Journal of the Pharmaceutical Society*, paid a visit to the "Telemon" in the Queen's Dock for a lesson in practical physics, viz., the refrigerating apparatus on a fruit-carrying ship. In theory, the process was seen to be very simple. Liquid carbon dioxide is allowed to evaporate from its original container into the "condenser," where under a pressure of 75 atmospheres, it is condensed to a liquid, the process being assisted by the cooling action of sea-water. The liquid is now allowed to escape through pipes laid in large tanks of brine, which is thereby cooled to a very low temperature, the now gaseous dioxide returning to the condenser to be liquefied once more. The cooled brine is in turn led through a series of tubes, and between these the air in the hold of the ship is forced by fans, and is thereby kept at a temperature of between 40° and 43° F. At this temperature the fruit can be brought with perfect safety from Australia or other distant port of shipment. In order to avoid absorption of heat from the engine room, etc., the whole apparatus is enclosed in boxes with double walls, between which there is a 9-inch layer of fine charcoal, the walls of the hold itself being protected in the same way.

Monograph on Tobacco. — Dr. Prof. O. Comes has published a handsome monograph on the species of Tobacco (Delle Razze dei Tabacchi, filogenesi, qualita ed uso), describing the various species and varieties in cultivation, and tracing them to their indigenous and original forms. The work is abundantly illustrated and should prove of great value to all concerned in this important industry. Professor Comes' monograph is addressed primarily to botanists and should prove a standard reference book for them, and, incidentally, for cultivators also. It is published by the Societa Co-operativa Tipografica, Naples.

A Good Response for Gardening Charities.—The members of the Altrincham and Bowdon Gardeners' Improvement Society have raised, by means of dramatic performances, held on December 5 and 6, 1905, a sum of £60 in aid of the gardening charities. Of this sum the Gardeners' Royal Benevolent Institution benefits to the extent of £31 10s., while the handsome amount of £15 is given to the Royal Gardeners' Orphan Fund. The surplus of £15 5s. is applied to the local Orphan and Emergency Fund. Altrincham has always done well in these matters, but the amount available for distribution this year shows an increase of £12. It would be a great help to these deserving institutions if other gardening societies would follow the example of Altrincham. At the annual meeting of the Gardeners' Royal Benevolent Institution, which is being held as these pages are printed, there are 44 candidates seeking relief, but of this number it appears that help can only be extended to 18.

Botrytis cinerea.—The December number of the *Œnophile* contains an article by Dr. Gy de Istvanffi upon the treatment necessary to be adopted in the case of vines affected with grey-rot. In summer the fungus lives on decaying foliage and on weeds—so that it is recommended that these should be at once destroyed. In wet weather the fungus attacks the living leaves and in autumn the berries. Moreover, in autumn it forms small hard nodules called "sclerotes," which persist during the winter in the shoots that are left and form new spawn (mycelium) and conidia (bud-spores) in the following spring. The vines should be washed over with a 5 per cent. solution of bisulphite of lime. Bordeaux mixture may be employed as a spray on the berries, or bisulphite of soda may be applied in the form of powder. But preventive measures and the destruction by fire of all affected leaves, shoots, &c., are the most effective measures to be adopted.

Publications Received. — A useful Blotter, Almanac, &c., from W. Wood & Son, Ltd., Horticultural Sundriesmen, Wood Green, London.—*The Book of Cut Flowers*, by R. P. Brotherston: published by T. N. Foulis, Edinburgh and London.—*The Garden Album and Review.* A monthly periodical, with coloured plates. Price 7d. nett.

NOVELTIES OF 1905.

(Concluded from page 27.)

Hardy Plants.

The most remarkable horticultural event of recent years, so far as new plants are concerned, has been the introduction of so many new and pretty hardy plants from China by Messrs. Jas. Veitch & Sons, of Chelsea, through their collector, Mr. E. H. Wilson, whose account of his travels now being given in the *Gardeners' Chronicle* gives pleasure to a large number of garden-lovers. The genus Primula has been greatly added to by P. pulverulenta, P. Cockburniana, P. Veitchii, P. vittata, P. deflexa, and P. tangutica, which Messrs. Veitch are now distributing, along with the pretty rose-purple coloured Geranium platyanthum, Artemisia lactiflora, Rodgersia æsculifolia, and R. pinnata alba. Other fine novelties brought into notice during 1905 by Messrs, Veitch (though some were figured in these pages in 1904) are the handsome Meconopsis punicea, M. integrifolia, and Buddleia variabilis magnifica, all of which secured First Class Certificates; Senecio (Ligularia) speciosa, Lilium leucanthum, L. sutchuenense, Lobelia tenuior rosea, Astilbe grandis, and others, most of which have been described in the *Gardeners' Chronicle*, and references will be found in the appended list of illustrations. Messrs. Veitch are also distributing the handsome Deutzia discolor major, Vitis Henryana, V. flexuosa Wilsoni, Lonicera tragophylla, Rubus lasiostylus, and other fine hardy plants.

Messrs. Cutbush & Sons, of Highgate, had awards for Adonis amurensis, Pulmonaria arvensis alba, and some other hardy plants, including the fine Carnations General Kuroki and Lord Charles Beresford, both good for outdoor and greenhouse culture

Mr. Amos Perry, Winchmore Hill, has developed new tints in Autumn Asters, and obtained Awards of Merit for Aster sub-cœruleus and Betonica spicata robusta.

Messrs. Kelway & Son, Langport; Ware, Feltham; R. Wallace & Co., Colchester, and others have contributed much to the improvement of garden-flowers.

Florists' Flowers.

Chrysanthemums, Dahlias, Roses, Carnations, Begonias and other of the large classes have been satisfactorily increased by cultivators of the different classes of plants, and most of these have been reported at various times in the *Gardeners' Chronicle*, many of the best being now enumerated in the list of good subjects illustrated in 1905. Of those which have received Awards it is at present impossible to say how many will become standard varieties for general cultivation, though all showed distinctive merits as novelties. Mr. Jas. Douglas, of Edenside, Great Bookham, took the lead with Auriculas and Carnations and secured many Awards. In Carnations he has arrived at the point formerly considered to be impossible, viz., a specially-saved strain of seeds warranted to give a large proportion of double flowers of good quality. Mr. Martin R. Smith, Mr. S. Mortimer, and Messrs. Bell & Sheldon also received Awards for Carnations.

Messrs. Dobbie & Co. extended their fame for bedding Violas by getting Awards of Merit for Violas, Councillor Watters, Doctor McFarlane, Isolde, and Royal Sovereign.

Narcissus.—These charming flowers increase in favour, though the good work already done in producing fine florists' varieties renders it difficult to secure Awards for recent novelties of superior merit. The best of the year which secured Awards were Narcissus Countess of Radnor, a white Ajax shown by Miss Willmott, V.M.H., who also secured an Award for Tulipa Fosteriana; Narcissus King's Norton, a Giant Yellow Ajax from Messrs. Pope and Sons, King's Norton; N. Lord Kitchener, a pale bicolor, sent by Mrs. Backhouse, Sutton Court, Hereford; N. Alice Knight, a pretty white Ajax with yellow centre from Messrs. Barr and Sons, Covent Garden; N. Cornelia and N. Masie Hall from R. H. Bath and Co., Wisbech; N. Banzai from Messrs. de Graaff, Leiden; and N. Countess of Stamford from Mr. E. M. Crossfield, Wrexham.

Stove and Greenhouse Plants.

These have been recruited chiefly by home-raised varieties, and by a few newly-imported species.

Fine novelties of the year were Crinum Rattrayi, the perfection of the C. giganteum class for which Sir Trevor Lawrence received a First Class Certificate, the same exhibitor securing an Award for Anthurium Scherzerianum burfordense, with showy spathes nearly six inches in length.

From the Right Hon. Lord Rothschild's garden came the handsome Nymphæa zanzibarensis rosea and the fine Gloriosa Rothschildiana citrina; from Leopold de Rothschild, Esq., the compact bright red Ixora "Mars"; and some other novelties were noted from other gardens.

Messrs. Sander & Sons, St. Albans, have attained great perfection in their beautiful strain of foliage Begonias and in the now popular Nicotiana Sanderæ, which is being still worked for novelties. Of their imported species Cycas Micholitzii is the most remarkable introduction.

Cyrtanthus angustifolius grandiflorus shown by Miss Willmott, V.M.H., and C. sanguineus glaucophyllus secured Awards of Merit, and the new C. inæqualis flowered from bulbs imported by Messrs. W. Cutbush & Sons, Highgate.

The following Novelties and interesting plants and fruits have been illustrated in the *Gardeners' Chronicle* during 1905: –

Abelia uniflora, May 27, p. 323
Adonis amurensis, Mar. 25, p. 188
Agapanthus umbellatus globosus, Sep. 23, p. 237
Aloe Chabaudii, Aug. 5, p. 102
Aloe decora, Dec. 2, p. 386
Aloe Orpenæ, Dec. 2, p. 386
Anemone nemorosa double, May 20, p. 307
Angiopteris evecta Teysmanniana, Supp. May 27
Apple, "Coronation," Oct. 14, p. 281
Apple, Fenn's Wonder, Jan. 14, p. 20
Apple, King's Acre Bountiful, Nov. 11, p. 341
Asparagus Sprengeri in flower, Jan. 7, p. 10
Aster sub-cœruleus, July 8, p. 23
Astilbe grandis, Supp., Dec. 16
Begonia, Duchess of Cornwall, p. iv. Supp., June 3
Begonia, Ne Plus Ultra, p. iii. Supp., June 3.
Bougainvillea spectabilis in California, Supp., Mar. 18
Brunsvigia gigantea, Supp., Mar. 25
Brunsvigia Josephinæ, Mar. 25, p. 186
Buddleia nivea, Oct. 14, p. 275
Calodendron capense, Supp., May 13
Campanula carpatica, "White Star," Aug. 19, p. 145
Campanula michauxioides, Supp., Aug. 12
Campanula Zoysii, Sep. 23, p. 288
Campanula punctata, Supp., Aug. 26
Canna Papa Crozy, June 10, p. 356
Cantua buxifolia, Mar. 18, p. 173
Carnation Bob Acres, July 22, p. 65
Carnation Elizabeth, May 6, p. 285
Carnation Countess of Radnor, Aug. 5, p. 113
Carnation Miss Willmott, July 22, p. 73
Carnation Pride of Westbury, July 29, p. 88
Castanospermum australe, Sep. 30, p. 245
Ceanothus thyrsiflorus, Mar. 25, p. 179
Ceropegia Woodii seed-pod, April 22, p. 244
Chrysanthemum Miss Irene Cragg, Nov. 18, p. 363
Chrysanthemum Mrs. R. Hooper Pearson, Supp., Dec. 2
Chrysanthemum Souvenir de Petite Anne, Dec. 16, p. 419
Citrus japonica, Dec. 23, p. 445
Clematis grandiflora, Dec. 2, p. 389
Cordyline indivisa, Feb. 4, p. 66
Crassula columnaris, Aug. 26, p. 162
Crinum Rattrayi, Supp., July 1
Crocus Malyi, Mar. 18, p. 163
Crowea angustifolia, Apr. 22, p. 242
Cycas Micholitzii, Aug. 19, pp. 142-3
Cyrtanthus angustifolius grandiflorus, Apr. 29, p. 261
Cyrtanthus inæqualis, Aug. 29, p. 261
Diervilla rivularis, Nov. 11, p. 339
Dimorphotheca aurantiaca, Aug. 12, p. 127
Echium Wildpreti, July 1, p. 5
Eleutherococcus Henryi, Dec. 9, p. 403
Eleutherococcus leucorhizus, Dec. 9. p. 404.
Eupatorium micranthum, Sep. 23, p. 229
Ericas Veitchii, arborea and lusitanica, Apr. 15, p. 228
Fig Bourjassotte grise, Oct. 7, p. 258
Gentiana Lawrencei, Oct. 28, p. 307
Gladiolus tristis concolor, Sep. 2, p. 187
Gloxinia Kaiser Wilhelm, June 10, p. 356
Gloriosa Rothschildiana citrina, Sep. 16, p. 211
Grape Prince of Wales, Oct. 14, p. 277
Heliamphora nutans, Apr. 1, p. 194
Heliopsis breviscapa, Mar. 25, p. 178
Inula Royleana, Supp., Oct. 7
Impatiens Holstii, July 1, p. 14
Iris tingitana, June 3, p. 339
Lachenalias, aurea, Brilliant, Jean Rogers, and pendula aureliana, pp. 210, 211
Lachenalia liliflora, Oct. 7, p. 259
Lilium Bakerianum, July 22, p. 75
Lilium Glehni, Jan. 7, p. 3
Lilium myriophyllum, Supp., Nov. 4
Lilium sutchuenense, Supp., July 29
Magnolia Kobus, Supp. Ap. 29
Meconopsis grandis, June 17, p. 369
Meconopsis integrifolia, May 13, p. 291
Narcissus (monophylla × Tazetta), Feb. 11, p. 82
Narcissus Nectarine and Pelops, May 20, p. 309
Nerines (Blenheim Palace), Nov. 18, p. 357
Nymphæa zanzibarensis rosea, Supp. Nov. 25
Orange, Japanese, Dec. 23, p. 445
Pear Louise Bonne of Jersey, Oct. 14, p. 283
Pear Madame Treyve, Supp. p. ii., Oct. 14
Pear Passe, Crassane, Jan. 7, p. 11
Pear Marie Louise, Oct. 14, p. 285
Pear Marie Louise d'Uccle, p. iii. Supp., Oct. 14
Pear Santa Claus, Jan. 14, p. 21,
Pear Roosevelt, Sep. 30, p. 243
Pelargonium Madame Crousse, Feb. 25, p. 116
Pelargonium "Clorinda," Supp., Ap. 15
Physalis (hybrid), Oct. 28, p. 315
Pinus Nelsoni, May 20, p. 306
Pinus Pinceana, Aug. 12, p. 122
Pinus radiata, Dec. 23, p. 455
Pinus yunnanensis, Sep. 23, p. 227
Primula Cockburniana, May 27, p. 331
Primula deorum, Feb. 18, p. 98
Primula ovalifolia, Supp., July 22
Primula tangutica, July 15, p. 42
Primula sinensis (stellata), Supp., Feb. 25
Primula Veitchii, Supp., June 3
Primula vittata, June 24, p. 390
Pteris aquilina, crested, Sep. 2, p. 189
Rhabdothamnus Solandri, Mar. 11, p. 146
Rhododendron Lady Godiva, June 17, p. 371
Rhododendron Pink Pearl, June 10, p. 354
Rhododendron Sappho, June 17, p. 370
Rhododendrons (Waterer's), June 10, p. 355.
Rosa gigantea, Supp., Mar. 4
Rosa sericea pteracantha, Oct. 7, pp. 260-1
Rose Lady Gay, June 3, p. 349
Roses Waltham Bride and Debutante, June 3, p. 347
Rubus innominatus, Oct. 21, p. 291
Sarracenias, Temple Show, June 17, p. 373
Senecio auriculatissimus, Apr. 8, p. 213
Senecio Veitchianus, Supp., Dec. 30
Schizandra Henryi, Aug. 26, p. 162
Schizanthus (Endcliffe), Aug. 19, p. 155
Spiræa Aitchisonii, Aug. 5, p. 114
Spiræa bracteata, March 11, p. 149
Spiræa pachystachys, Nov. 4, p. 322
Strawberry Bedford Champion, July 15, p. 43
Sweet Pea Helen Lewis, July 8, p. 35
Sweet Pea Henry Eckford, July 15, p. 47
Syringa villosa pubescens, Aug. 12, p. 123
Thalictrum Delavayi, Dec. 30, p. 450
Thunbergia natalensis, Mar. 18, p. 162
Veronica Hulkeana, Sep. 30, p. 242
Vitis Henryana, Oct. 28, p. 309
Widdringtonia Whytei, Jan. 14, pp. 18, 19.

PEARS AT HARTHAM PARK.

A visit paid in autumn to Hartham Park, Corsham, the residence of Sir John Dickson-Poynder, afforded an exceptional instance of successful Pear culture, conducted by Mr. W. J. Welch, the gardener in charge. Pears were unsatisfactory prior to Mr. Welch's time, and a remedy was sought by him in cordon-trained trees, planted in a well-prepared border consisting largely of maiden loam incorporated with some of the original garden soil, to which were added some bone meal and wood ashes. A wall having a southern aspect was cleared of derelict trees, the adjacent border excavated to the extent of a yard in width and depth, and drainage provided prior to this space being filled up with a prepared mixture of soil. Trees were purchased from a good source, in some cases six of one kind, the after-growth of which gave ample return for the labour involved. Fruits of good appearance, high quality, and large size were soon forthcoming, and they increased in quantity as years passed. Failure due to spring frosts is unknown here, and is largely due to the protection afforded the flowers; double or treble thicknesses of fish-nets are suspended and kept rigid by means of fir-poles placed in position in good time. The same provision has to be made in autumn to protect the fruit against the attack of birds, some of which show so marked a partiality for Pears. To give a greater length of main rod, the trees are trained obliquely. Beurré d'Amanlis following so closely on Williams' Bon Chretien, perhaps affords a solitary instance of complaint as to high merit, and this, I think, is readily admitted, and often experienced by others, for it is difficult to "take on" another Pear once the Bon Chretiens are over. Louise Bonne of Jersey, Souvenír du Congres, Comte de Lamy, Beurré Superfin, and Beurré Hardy afford a succession of high-class, clear-skinned fruits. Of Doyenné du Comice, several trees have been planted, and their yield is always satisfactory, for the clearness of the skin and large size of individual fruits gives this, the best of all Pears, its true value and position. Pitmaston Duchess necessarily grows to a large size, as do Beurré Alexander, Lucas, Princess, Durondeau, Beurré Diel, and Beurré Bachelier. This last-named Pear is grown more as an accommodation than for quality, keeping up, as it does, a succession, when other and better ones have been used. Emile d'Heyst and Marie Louise both do well, and give of their best, being always reliable in crop and flavour. Of smaller kinds, Winter Nelis is always good, so, too, is Josephine de Balines, Easter Beurré and Bergamotte d'Espéren. One of the finest specimens I have ever seen of this variety grew at Hartham; the fruit, typical in shape, was distinctly out of proportion to the familiar size. Both Marie Benoist and Nouvelle Fulvie succeed well. These are varieties that are not universal successes, but the same may be said of many other varieties, soil playing so large a part in the successful culture of any particular kind. Beurré Rance, if it does not always ripen sufficiently for the dessert table, can be turned to useful account by the chef. Mr. Welch makes an effort to induce surface root action by mulching and feeding. The border is so fully occupied with roots that no part of it could be disturbed without injury to the fibres. To this fact, no doubt, is due much of the success of the system of culture adopted. There is no gainsaying the fact that cordon training here gives much better results than could possibly be got from any other form of tree, because the space at disposal on the walls is not of great extent. *W. Strugnell.*

MASSONIA PUSTULATA.

This very curious and interesting plant was exhibited by Mr. Elwes at the last meeting of the Royal Horticultural Society, when it received a Botanical Certificate from the Scientific Committee. The plant is by no means new in gardens, as it was introduced by Masson, and was figured in the *Botanical Magazine* more than a century ago (tab. 642, April 1, 1803), but it does not seem to have been found wild since Masson's time. Mr. Elwes' plant differs from the one originally figured in having three leaves in place of two—otherwise it agrees exactly. Mr. Worthington Smith's drawing shows the pustulate leaves, "like shagreen," as stated in the *Botanical Magazine*. He also supplies details of the flower which will be very useful. From them it is evident that the plant is Liliaceous with a head of green flowers, each of which has a cylindrical perianth tube, from the edge of which proceed the six narrow spreading segments and as many stamens. The tube of the flower is filled with nectar, formed as it would seem from the blackish tissue at the base of the stamens. This is well described in the *Botanical Magazine* as "a clear nectareous liquid which, rising above the brim, adds to to the singular appearance of the plant." The pollen grains, as observed by Mr. Smith, are relatively large and ellipsoid. The genus Massonia, according to Mr. Baker's monograph of the Liliaceæ contains 23 species, all natives of the Cape of Good Hope. The exact habitat of the present species is unknown. See Baker in Flora Capensis, vi. (1897), p. 410. A warm greenhouse temperature with plenty of water in the growing season and little or none during the resting stage seem to be indicated.

LAW NOTE.

POISONOUS WEED KILLER.

At the Chertsey County Court, on January 11, before his Honour the Hon. A. Russell, the Pharmaceutical Society of Great Britain sued Messrs. Jarvis & Mackie, seedsmen, &c., of Weybridge, for a penalty of £5, under section 15 of the Pharmacy Act, 1868, for selling arsenic contained in and forming part of the ingredients of a compound known as Bentley's Weed Killer. A witness named Waldock said he called at the defendant's premises, and asked for some Aqua weed killer, but the assistant said they only kept Bentley's. The witness then purchased a tin (produced), which had nothing on it to show at which shop it was purchased. Mr. Moon, Secretary of the Pharmaceutical Society, said the compound sold as Bentley's Weed Killer was a most deadly poison, and should only be sold by a chemist after enquiring the name and address of the purchaser. Mr. P. C. Burley, of Petersfield, who appeared for the Society, said the object of the prosecution was to protect the public against the sale of this deadly poison except by qualified persons under special restrictions. His Honour gave judgment for the Society, awarding the penalty asked for, and costs.

NURSERY NOTES.

AMERICAN CARNATIONS AT MESSRS. WALSHAW & SON'S, SCARBOROUGH.

A visit to these nurseries during the winter months will amply repay all who are interested in the American Carnation and its culture, for here these lovely flowers are grown to perfection. The American Carnation is an improved type of the old tree or perpetual flowering varieties, being of larger size and possessing longer stems than the older race, thus rendering them more suitable for use as cut flowers, or as decorative plants. The plants should be rooted early in the year, potted in the spring into 5-inch and 6-inch pots, placed outside until the end of August, when they should be removed to their winter quarters. A span-roof house, provided with abundant means for ventilation, forms a suitable structure for their accommodation. They can be had in flower all through the winter months without the aid of much fire heat. It is necessary to fumigate the plants once a month or thereabouts, in order to keep down green-fly. Some growers succeed with them when they are planted out into prepared beds of good soil under glass during the winter months. The dreaded rust, I am told, may be ignored in these American introductions, for they grow out of it, and are none the worse for its attack.

At the time of my visit (November 28), several houses contained these plants in their various stages of growth, from the cuttings, which are struck singly in small pots in a little bottom heat during the winter months, to well-flowered

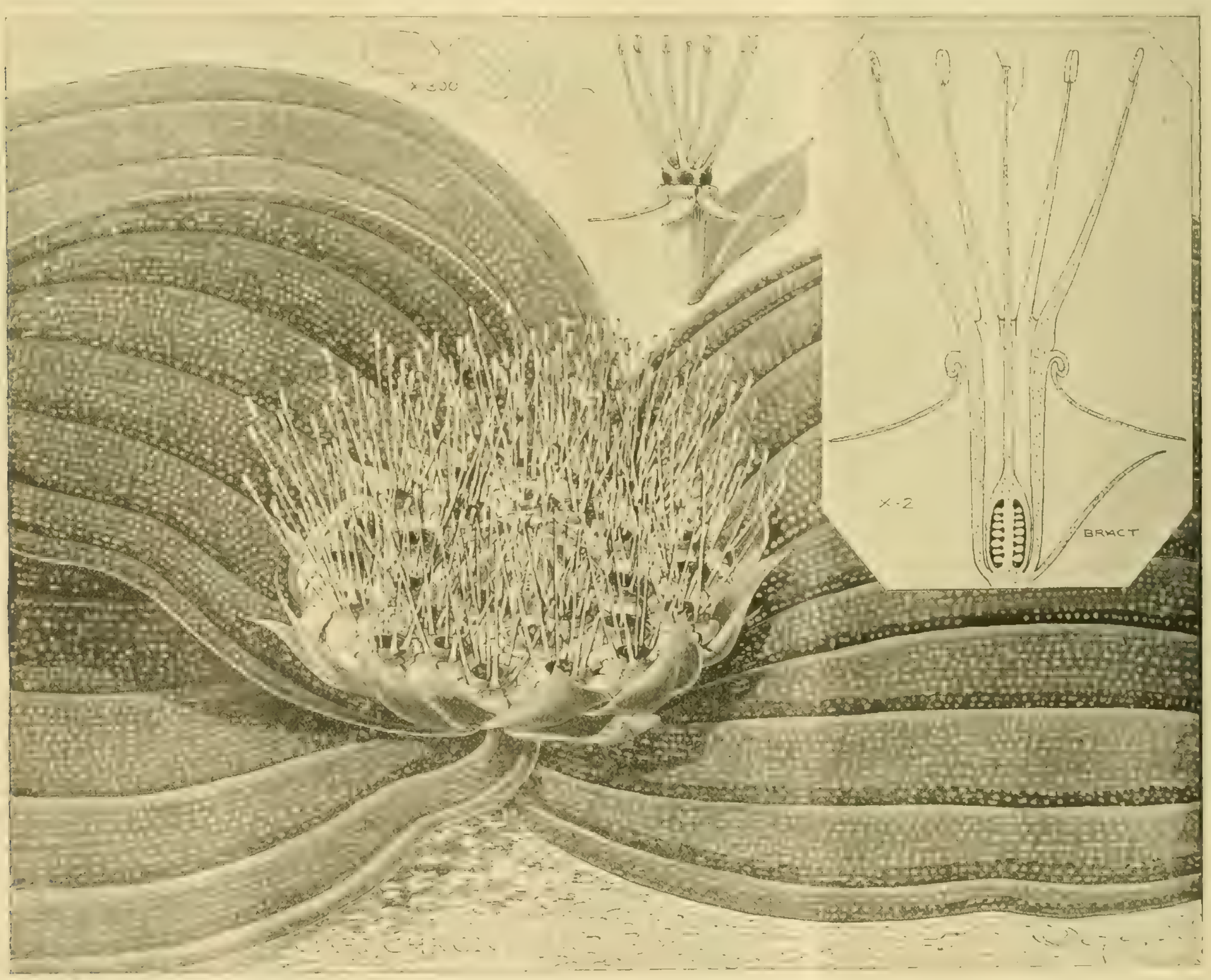


Fig. 23.—Massonia pustulata. Real size; flowers green, with a black centre.

plants in 5-inch and 6-inch pots. Older and standard varieties include Mrs. T. W. Lawson, a well-known variety, having large, deep-pink coloured flowers; Harry Fenn, a large crimson flower, with a long, stiff stem; Floriana of coral-pink colour, and possessing a very sweet perfume; Prosperity, a large fringed flower, colour, a whitish-pink; and Governor Wolcott, a large pure white variety.

Varieties of 1904.—Judge Hinsdale, Mrs. M. A. Patten, MacRinde, The Belle, Lady Bountiful, the three last named being white varieties; Enchantress, a very large flower of flesh-pink colour; Ethel Ward (rose-pink), Flamingo (brilliant scarlet); Christmas Eve, a variety flowering late in the season; The President (bright crimson), and Octoroon (the petals of this variety are fringed).

Among the new varieties of 1905 are Lieut. Peary (snow-white), Fiancée (pink), Cardinal (brilliant scarlet). Most of the above-named varieties are deliciously scented, and seem destined to become popular favourites. They are more easy of culture, and better to manage in every way than Souvenir de la Malmaison Carnations, and afford a supply of flowers during the winter months without entailing great expense.

Other interesting things noticed at the time of my visit were a large House of Begonia Gloire de Lorraine, the plants, in 4 and 5-inch pots, all showing excellent health and good development of colour; a splendid lot of Poinsettia pulcherrima, in 5 and 6-inch pots; quantities of Lilium lancifolium, etc., in various stages of development; thousands of plants of Lily of the Valley, Chrysanthemums in great variety, Callas, Kentias, and other Palms. *Bailey Wadds, Birdsall Gardens, York.*

THE HARDY FLOWER BORDER.

KNIPHOFIA CAULESCENS.

THIS is one of the strongest growing species, and, if planted in a slightly sheltered position, soon grows into a mass. A fine clump in the Cambridge Botanic Gardens is growing near to the south side of a greenhouse. The clump occupies a space about 10 feet by 4 feet, and flowers very freely during July and August. The red and yellow flower heads are produced on strong scapes about 4 feet in height, and they give a bold display of colour even when viewed from a distance.

In the colder parts of the country some protection from severe frost is necessary, and may be provided by placing a good coating of leaves or any rough litter about the bases of the plants on the approach of rough weather. *E. J. Allard.* [This species was figured in a supplement to the *Gardeners' Chronicle*, November 16, 1889.—ED.]

GYPSOPHILA ROKEJEKI.

G. ELEGANS, G. paniculata, and the earlier blooming G. Stevensi are the best known species of Gypsophila. But this one with the outlandish name is well worth introducing to their circle. In our cool climate it reaches a height of 6 feet, and increases in comeliness—it cannot be called beautiful—as the days shorten. The plant looks its best when isolated in a group of low-growing plants. It is then handsome, but in a mixed company of tall plants it is passed unnoticed. Like other Gypsophilas, it grows and produces its flowers without causing any trouble, and also like them, it is of much use as a cut flower.

ACONITUM AUTUMNALE ALBUM.

NOT many white varieties of blue flowers are better than the type, and when the species is in every respect possessed of so much beauty, alike of foliage, habit, and colour as this, one hails a good white variety with the greater pleasure. The plant has yet to make its way, but it is in every respect so fine that is is only a question of time to find it occupying a prominent place among the best herbaceous plants. The flowers are really not white, but a sheeny, silky approach to it, and one of its greatest charms. The Autumnal Aconite is usually grown as large single plants, but to secure its fullest beauty strong single crowns should be selected and planted at a foot apart. The white variety blends admirably with the blue, but is also invaluable if grouped separately.

CELSIA CRETICA.

FEW plants attract more attention than Celsia cretica when grown, as it ought to be in large groups, yet, judging from the enquiries made as to its identity, the plant is but little known. I treat it and other Celsias as half-hardy annuals. From seeds sown in February the plants begin to flower in July, and continue till the end of the season. The effectiveness of large groups is increased when plants here and there are topped early in the season, which induces a more dwarf and bushy growth. Here the spikes attain to a height of 4 to 5 feet. Also handsome and much taller is C. coromandelina, another yellow-flowered species, which is useful to mix with low-growing herbaceous plants. C. pontica has white flowers, with free branching spikes rising to a height of eight feet. It is one of the best autumnal hardy flowers we have, and well worth extended cultivation. Those who have seen it only as a half-starved and old specimen in the herbaceous border can form no idea of how handsome and effective a subject it is when grown as an annual. I have no doubt that in the southern counties seeds sown in the open in March will yield good autumn flowering plants. In the north they are too late, though this year I have the pretty C. Arcturus flowering from open-air seedlings. The above-named are the best of the Celsias I have tried, and they are all so good that they can be safely recommended for general cultivation, only it is essential to grow several together, and not one here and there singly. *R. P. B.*

FRUIT REGISTER.

BALGOWAN NECTARINE.

I HAVE found this old, but seldom seen, Nectarine, an excellent variety, both under glass and outside. On our stiff limestone soil, we cannot get either of those two fine varieties, Early Rivers and Lord Napier, to succeed. The trees of these two varieties produce abundant crops, and the fruits attain a fine size, but they always shrivel at their crowns just before ripening, although we have tried shading them heavily after the commencement of their second swelling. We have lifted the roots in winter, but all to no purpose. As will be known to experienced fruit growers, some varieties of fruits, and these often good kinds, fail to finish well in particular localities. In our case no Nectarine that has any of the Old White Nectarine parentage does well. I think both the varieties named are of that lineage. There was a fine tree of Old White in one of the Peach-houses when I came here in 1872, but its fruits never finished satisfactorily. I well remember my predecessor, Mr. W. Denning, telling me it had not done well under his care. The varieties, Violette Hative and Elruge, generally succeed well with us. Balgowan is of the same type, but its fruits are larger, and are equally as good in colour, texture of flesh, and flavour. As its name implies, it is of Scottish origin. *H. J. C., Grimston.*

THE VILMORIN MEMORIAL.

BY the courtesy of the director of the *Revue Horticole* we are now enabled to lay before our readers an illustration of the model of the proposed Vilmorin monument. On the death of the late Henry de Vilmorin it was suggested that a memorial should be erected which should perpetuate his memory and serve to recall the great services to horticulture and agriculture rendered by the Vilmorin family. It has been said that but for them there would have been less wheat in our fields, less sugar in our Beet-roots, and fewer flowers in our gardens. Although the saying applies especially to France it is by no means inapplicable here and in America. No foreigner, we venture to say, was more beloved in this country by those who knew him than Henry de Vilmorin. Our fathers said the same thing of his predecessors, and the present representatives nobly uphold the traditions of the family. The group modelled by M. Carlier is suggestive of Agriculture and Horticulture and of the work done by the Vilmorins in these departments. On the pedestal are placed four medallions representing four generations of the Vilmorin family. The total number of subscribers up to the present time is 3,822, and the amount received is 37,151 francs (about £1,486). As showing how wide was the respect felt for Henry de Vilmorin it may be noted that a large number of the subscriptions are for small amounts of one franc and upwards. In order to complete the monument as designed further subscriptions are requested. We shall be pleased to remit to M. Bourguignon, the Treasurer, any sums that may be entrusted to us for the purpose.

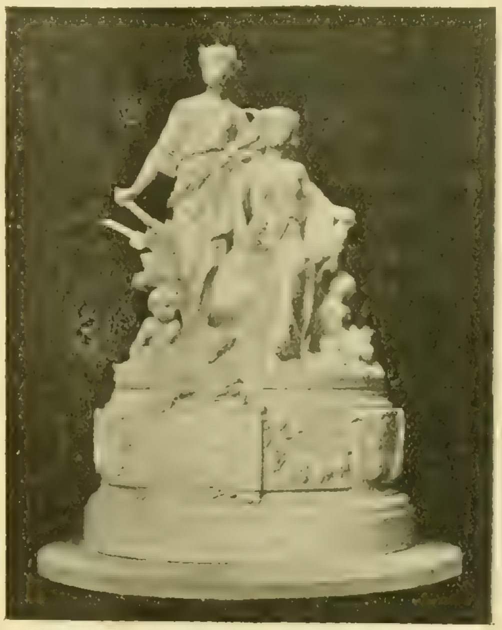


FIG. 24.—THE VILMORIN MEMORIAL.

PLANT NOTES.

MOMORDICA ELATERIUM.

THIS plant is said (*Bot. Mag.*, tab. 1914) to survive only two or three years in the open. I have a specimen in my garden which has now survived 12 years, and possesses a very large rootstock. Many other specimens have established themselves at a short distance from the old plant, sprung up, of course, from the scattered seeds. Some of them have already survived six years.

MIMOSA DENHARDTI.

CAN anyone let me know something about this plant, of which I have four fine specimens, with leaves almost as sensitive as those of Mimosa pudica? It is a greenhouse plant. I cannot find any reference to it in the *Index Kewensis* or its supplements. *M. Buysman, Middelburg, Holland.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Helleborus niger.—Mr. C. Ruse, in writing of the different varieties of Christmas Rose, p. 444, vol. 38, states that St. Brigid's Christmas Rose is synonymous with Helleborus angustifolius. This is certainly not the generally accepted opinion, for amongst those who have made a study of the Hellebores, the correct name for St. Brigid's Christmas Rose is recognised as H. juvernis. This is quite a distinct plant from H. angustifolius, and is one of the most beautiful forms of H. niger. It bears pure white flowers, which are cup shaped, upon apple-green foot-stalks, the foliage being little serrated and of lightish green colour. Of H. n. angustifolius there are two forms, the Scotch and the Manchester varieties, the former being sometimes known as H. n. scoticus. In the variety scoticus the blossoms are often suffused with rose at the back of the petals, but in the Manchester variety the flowers are pure white. In both forms the blooms are somewhat starry in shape and quite lack the cupped appearance of H. n. juvernis. Some nurserymen also err in cataloguing H. n. angustifolius and H. n. juvernis as identical. *S. W. Fitzherbert.*

Rhubarb.—Where fresh plantations are required (and it is best to make a new one each year) the present is a good time to do so. Rhubarb being a gross feeder, rich, well-trenched ground is essential to quick growth. Divide up as many crowns of a good variety as necessary, choosing a variety that will force easily, and plant them in rows 3 feet apart, allowing the same between the plants. A good, strong knife is the best instrument to use in dividing the old plants, as there is less likelihood of causing injury than when the spade is used. Dig up and thoroughly expose to the weather all plants intended for forcing, as growth will then be much quicker after they are subjected to the influence of heat. *James Gibson, Welbeck Gardens, Worksop.*

Roots in Store.—Examine all roots in store, and it is worth while even to re-store the whole at this season. There is then less likelihood of decayed parts passing unnoticed. No attempt should be made to keep the soil around them excessively dry, or such roots as Beet and Turnips will lose some of their juice and other qualities. *James Gibson, Welbeck Gardens, Worksop.*

Seed Packing.—Early in the year 1890 my brother, Harold E. Bartlett, who was then 200 miles up the Niger in the service of the Royal Niger Company, wrote home asking me to send him a few seeds of common annuals and perennials, such as, Mignonette, Stocks, Asters, Sweetwilliams, Foxgloves, etc., and two or three Grape stones, as, although surrounded by noble Palms and many gorgeous flowers of the tropics, he, like many of our countrymen similarly situated, longed for the sight and smell of the common flowers of our English cottage gardens. "I want to make, as far as I can, a little English flower-garden in front of my bungalow," he wrote; "so just send me the merest pinch of each kind in your next letter. I don't much care even if they are mixed up, I can sort them as they grow. Don't take any trouble with packing as postage is very dear (6d. per ½-ounce), and all these patent paraphernalias are quite unnecessary. When I came out I brought some seeds from Kew in ordinary paper packets, and to my great surprise nearly everykind germinated very quickly and freely. I expected a large proportion of failures." I do not know what these seeds were, but as the journey to the Niger at that time included a fortnight in a coasting steamer along the Gold Coast, one of the notoriously hot and dry regions of the world, this was a good test of the vitality of seeds under the impossible conditions of Mr. Watson's critics. The few mixed seeds which I sent were duly received, but I fear were never sown, for my poor brother, after struggling manfully against nine months of intermittent fever, succumbed to an unusually severe attack which brought to an untimely end a very promising career. *A. C. Bartlett.*

Anthracite Coal at a Bargain!—Can any reader throw some light upon the reason why trucks loaded with anthracite coal are so constantly breaking down? About once a month I receive a letter from sellers of such coal telling me that they unfortunately have some trucks of anthracite coal broken down near my station, and asking if I would care to avail myself of the opportunity of buying this coal at such and such a price. The last firm I heard from made me an offer of coal of this kind at about the ordinary market price at the time. My curiosity was aroused, so I wrote to the vendors asking where the broken down trucks were. I was told "they were at a certain station"; but the stationmaster there informs me he can find no trace or record of any broken down trucks, or, indeed, of any trucks of anthracite coal awaiting order. I write this wondering if other readers of the *Gardeners' Chronicle* are pestered by similar attempts to induce them to buy anthracite coal at market price under pretence that they are being offered a bargain because of a misfortune which has fallen on the coal-seller. *A. Holland Hibbert.*

The Unemployed.—Instead of sending money to the Queen's Enemployed Fund, Sir Charles Hamilton, Bart., Hatley Park, has given work to a dozen men with large families to support living in the neighbouring parish. As there are in most gardens at this time of the year additions and alterations to be made in the pleasure grounds, &c., these men are proving very useful to the gardener. It is a good idea, and should be followed by other generous employers. *B.*

White Nice Grape (see p. 16).—This grape used to be, and may be still, grown at Arkleton, Langholm, Dumfriesshire. *H. W. W.*

The Willow for Cricket Bats.—What is the botanical name of the particular Willow of which the best cricket bats are made? The question is not so easily answered as might be supposed. I have consulted the authorities at Kew, but they could only refer me to their issue of the *Kew Bulletin* of September, 1905, p. 239, where there is a paragraph relating to "Salix alba"—the Huntingdon or White Willow used for making cricket bats. From this it appears that the supply is falling off and the demand increasing, as much as 5s. per cubic feet having been offered for "the right stuff." All the authorities that I have consulted, such as Loudon, Forbes, and the greatest authority on Willows of all, Borrer, make no mention of this particular use to which the wood of "Salix alba" is put, probably because the modern bat was unknown in their time. As my own botanical friends could not help me, the next step was to consult the batmakers; and what did I find? That they also were quite ignorant of the correct name, but knew the tree when they saw it, and I gathered in the course of my enquiries that so keen where they to secure the "right stuff" that they were constantly sending men to scour the country for it. I ascertained that the trade name for it is the "Close barked White Willow" as opposed to the open barked sort, and that the best comes from Essex. The qualities required by the makers are lightness and straightness of grain, and the ordinary White Willow as found in the Midlands and the North is deficient in these qualities, being, in fact, much too heavy and solid. Now, all botanists are aware that the Willows constitute one of the most involved genera of plants to study, and no two authorities agree as to what are species and what are varieties. There are so many hybrids and they differ much according to the sex of the tree, soil, and climate. Thus Alpine willows 6 inches high, with narrow leaves, when planted in an English garden, develop into bushes and change their character completely. Whether the climate and soil of Essex have anything to do in this case with the quality of the wood, or if it is the particular variety that grows there, I am unable at present to prove. I have secured some cuttings that are supposed to be of the variety required, but the species cannot be proved until they have grown large enough to produce flowers. My own theory is that the "close barked White Willow" will be found to be Salix alba var. cœrulea, and possibly the female, which is the more vigorous. It is the quickest grower of all the tree Willows in a moist soil, reaching 18 inches in diameter in as many years, when it is ready to cut down. The quicker the growth the lighter the timber and the better the price, and the profit from the planting of this ought to compare very favourably with any other timber with which I am acquainted. *L. Fosbrooke, Ravenstone Hall, Leicestershire.*

To Brighten Beds of Azalea, Rhododendron, Erica, Skimmia, etc.—That the beds and borders consisting of these plants want some other species to give colour to them should they form prominent objects in or about a flower garden, is a thought that would occur to most persons, and these same individuals would most probably choose some members of the genus Lilium to fulfil this purpose. In many cases this would result from conscious or unconscious copying, a thing we all do too commonly. There are many other species of plants which would do equally well. Even Lilies do not flower all the summer and autumn seasons, unless you make use of the bulbs in pots, and possess cold storage, so as to have them in bloom in nearly every month when blossoms are to be found in the open. And few of us can do that. The main consideration is the time of year in which the beds of shrubs are to be brightened. Is it before the blooms of the chief permanent occupants of the beds appear, or after the flowering is over? There are Roses of various classes which would be very suitable as affording flower colour in quantity; for example, the various Ramblers, Fellenberg Noisette, Scots Roses, the common China or monthly Roses, as Cramoisie Supérieure and Hermosa, very regular and constant bloomers; the so-called Bedders, viz., Fisher Holmen, Duke of Wellington, Captain Christy, General Jacqueminot, Grace Darling, Gruss as Teplitz, Mad. Victor Verdier, Magna Charta, etc.; and the Rosa polyantha varieties. Roses, like all other plants that do not succeed in peat, must be planted in properly prepared suitable composts, in stations excavated between the bushes; not a difficult matter if the latter are not standing too closely together. The chimney Campanula (C. pyramidalis) would show up with fine effect where the bushes are not taller than four feet, and C. carpatica might be employed near the margins of the beds. Ajuga reptans, Plumbago Larpentae, the bright, free flowering varieties of Pyrethrum roseum, Gaillardias, and Aubrietias, make showy permanent borders to beds of Azaleas, Rhododendrons, etc., as do the various species of hardy Ericas. For interspersing between the permanent shrubs, Hyacinthus candicans, Hemerocallis flava, aurantiaca and fulva are showy and of moderate growth, also Lythrum virgatum, Pentstemons, Golden Rod, Phlox decussata, and the bulbous and other Irises offer good material of a showy character. Dahlias of the Pompon and dwarfer single-flowered forms would not be out of place in such beds, and such Spiræas as Bumalda, the taller varieties of Callosa; Antony Waterer, S. Thunbergi, S. Sorbifolia, and S. Douglasii, would afford desirable colours and pretty flowers. Where the beds of shrubs are of large size, it would not be inadmissible to plant a few standard Crabs, such as the Siberian, coronaria, florepleno, floribunda, Orientalis, Dartmouth, etc., such objects assisting in the breaking up of the contour of flat-headed colonies of evergreens. But the employment of such objects demands careful consideration, otherwise incongruous combinations will result. The mixing of but few species of plants in beds adjacent to each other would be preferable to too large an assortment, that would only be productive of a bizarre effect. In most cases one bed one species of plant should be the rule with regard to those employed for brightening, excepting if the bed or border is of great extent, when more latitude may be indulged. *F. M.*

Citrus Japonica fructo elliptico.—The First Class Certificate granted to this most unhappily named little orange by the Fruit Committee, on the 9th inst., had nothing whatever to do with the decorative appearance of the plants shown by Messrs. Veitch & Sons, but solely with the fruit as produced and tasted. Those who may not have seen plants in fruit, and know Golden Nugget Tomato, can understand that each plant, though but 18 to 20 inches in height, bushy and well-foliaged, carried scores of golden-coloured fruit, just about the size of those of Golden Nugget, but a little more cylindrical. Most certainly this remarkable prolificacy helped to the award, but more still did the tasting of the ripest fruits, and the riper the sweeter, for they were, though of brisk taste, yet the sweeter the more eaten, and the committee regarded them as presenting a most interesting and useful addition to our too limited list of house-grown dessert fruits. *F.R.H.S.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JANUARY 9TH.—*Present:* Dr. M. T. Masters, F.R.S., in the chair, and Messrs. Massee, Saunders, Odell, Elwes, F.R.S., Michael, Douglas, Bowles, Pickering, F.R.S.; Dr. A. B. Rendle; F. J. Chittenden, hon. sec.

Botanical Certificate.—Mr. H. J. ELWES, F.R.S., V.M.H., showed Massonia pustulata [see Fig. 23 on page 44], a curious Liliaceous plant from S. Africa, having a very short stem bearing three large dark green pustulate leaves and a flattened circular inflorescence. It was figured in the Bot. Mag., No. 642. Mr. ELWES remarked that it was of exceedingly slow growth. On the motion of Mr. DOUGLAS, seconded by Mr. BOWLES, a Botanical Certificate was unanimously awarded.

Apple diseased.—Mr. SPENCER PICKERING, F.R.S., showed fruits from a tree grown in Bedfordshire, and known locally as the "Ring Pippin." Two trees of the variety were growing in an old orchard, and every fruit every year was grooved transversely, so that a deep ring was made in the flesh. No fruits on the trees of other varieties in the orchard were similarly affected. Other members of the committee remarked that similarly cracked fruits were not uncommon, but that they had not seen so extensive an occurrence of the trouble. Mr. DOUGLAS thought that cold winds in the spring were a possible cause. Mr. MASSEE took the fruits for further examination.

Silver-leaf in Apple.—Mr. PICKERING also reported that upon the trunk of the Apple tree in Devonshire, which he had previously mentioned as being affected with silver-leaf, the fungus Stereum purpureum, which is so often, if not invariably, associated with the disease, had made its appearance.

Clematis stem cracked.—Mr. SAUNDERS showed a piece of the stem of Clematis Jackmanni which had split open for a distance of 2ft., starting about 3in. above the surface of the ground. In the interior of the stem a callus-like growth had developed. The stems were referred to Mr. MASSEE.

Fruits, &c., from New South Wales.—Dr. MASTERS showed the following on behalf of Mr. BLAND, of Soham, Cambridge.—

Macadamia ternifolia ("Queensland Nut").—The tree, which belongs to the Proteaceæ, grows wild in the large scrub in the colony, The nuts are very nutritious and of very fine flavour, but are encased in an exceedingly hard shell, which can only be broken by the aid of a hammer. [See *Gardeners' Chronicle*, 1870, p. 1181.]

Castanospermum australe.—The large pod of this, the "Australian Chestnut," with ripe seeds, was also shown. [See *Gardeners' Chronicle*, Sept. 30, 1905, Fig. 93.]

Gleditschia triacanthos.—Legumes of this plant, which occasionally fruits in this country.

Aleurites moluccana.—The Candle Nut tree produces edible nuts, which contain a considerable quantity of oil. From the roots the Sandwich Islanders extract a brown dye.

Coffea arabica var. angustifolia. Grown in New South Wales.

Dodonæa triquetra.—Fruits of this Sapindaceous plant with winged carpels giving a superficial resemblance to hops.

Panicum maximum.—A specimum of this grass, which produces three crops per annum. Stock are very fond of it. An analysis of the grass gives—Moisture, 18.9; albuminous compounds, 7.8; carbonaceous matter and woody fibre, 58.32; mineral ash, 14.97.

Mr. BLAND also sent a silken case into which pieces of twig had been interwoven, and in which a caterpillar lives. The larva suspends the case from branches, fences, etc., and protrudes its head from the opening. At the slightest noise or touch it withdraws its head instantly.

Excrescences on Logan berry.—Mr. J. S. TURNER sent specimens of large, almost spherical, growths of about 3in. in diameter on roots and stems of the Loganberry, very similar to those frequently seen on the roots of Maréchal Niel Roses, formed just below the surface of the soil. The formation of these swellings has been attributed to frost or in other cases to irritation set up by a mite, a species of Rhizoglyphus.

Excrescences on Roots of Birch.—Mr. NOTCUTT, of Woodbridge, Suffolk, sent an example of a similar but much larger growth on the root of Silver Birch. The formation of this gall-like growth on the Birch roots has been attributed to the presence of Schinzia betuli.

Water for Spraying, &c.—Lady St. OSWALD sent the following communication concerning the rainwater supply for garden purposes:—"We are situated in the midst of collieries, brick, coke, and other works, and we think our water supply, which is collected into cement tanks in the usual way, contains an injurious amount of sulphuric acid, &c. Our reasons for thinking the water is harmful are that when used for syringing plants and fruit trees the points of the leaves where the water has been hanging gradually die away until nearly the whole of the leaf is gone. This has been a regular occurrence here, particularly with Peach leaves. Sphagnum-moss on orchid pots and pans does not thrive, and goes brown and dies, but if the syringing is discontinued the young leaves grow healthily. Even roots of some things unaccountably die away." It was recommended that lime should be added to the water except that which was to be used for spraying; to this common ammonia may be added.

GLASGOW SEED AND NURSERY TRADE ASSISTANTS' ASSOCIATION.

JANUARY 13TH.—The members of this Society held their annual dinner on the above date, Mr. A. N. Hunter occupying the chair. In all sixty-three members and friends, representing most of the seed and nursery firms of the city, sat down to dinner.

The principal toast, "Seed and Nursery Trade Assistants," was given by Mr. WILLIAM LEIGHTON, who recalled the days of his apprenticeship, when the regular closing hour in the trade was eight o'clock, Saturday included. In those days there were not so many opportunities for improvement as now, and he thought that the Association was a step in the right direction.

Other toasts followed, and the local Secretary for The Royal Gardeners' Orphan Fund (Mr. JAS. H. PARKER), was afforded an opportunity of speaking on behalf of this laudable Society, with the result that a collection of three guineas was taken in aid of this charity.

NATIONAL CHRYSANTHEMUM.

At a meeting of the Executive Committee on Monday evening last, Mr. Thomas Bevan presided.

Mr. HARMAN PAYNE announced that, in accordance with the resolution of the Committee, a copy of the "repertoire des couleurs" had now been purchased for the use of the Floral Committee, and the same was handed over to the Chairman.

Mr. DEAN, the Secretary pro. tem., then laid before the Committee the balance-sheet for the past year and rough draft of the annual report to be submitted to the annual general meeting of the Society in February next. Mr. C. H. CURTIS submitted a report of the "Early Flowering" Conference, and it was resolved that the papers read and the discussion which ensued should be printed and issued as a separate publication of the Society. A vote of thanks, accompanied by a silver medal, was accorded to Mr. Curtis for his services in connection with that gathering. Some discussion then ensued upon the advisability of the Society publishing a year-book or journal, and this matter was referred to a sub-committee consisting of Messrs. Crane, Curtis, Hawes, Harrison, Jones, and Foster.

Mr. HARMAN PAYNE gave a report of the steps taken by the sub-committee in whose hands the consideration of applications for the post of general secretary to the Society had been entrusted, and it was resolved to adjourn the meeting for another week. It was resolved that in future the awards to be made to miscellaneous exhibits at the Society's shows shall be entrusted to the Floral Committee.

Obituary.

G. W. MAIR.—We regret to announce the death of Mr. G. W. Mair, Superintendent of Victoria Park, Handsworth, near Birmingham, on the 3rd inst. Mr. Mair was born in the county of Fife, Scotland, and received his early training in gardening in the Royal Botanical Gardens, Edinburgh. He was afterwards employed in the nurseries of Messrs. Thomson, at Clovenfords, and when the managership of the Aston Lower Grounds became vacant he was elected to that office. About 15 years ago the Handsworth District Council opened the Victoria Park to the public, and a year or so later Mr. Mair was appointed Superintendent, a position he occupied until his death. Many improvements have been effected in the park during that time, notably the extension of the area, the addition of a large sheet of water, &c. Mr. Mair who was connected with the management of the Handsworth Floral Fete was in his fifty-sixth year, and is survived by a widow and one daughter.

NATURAL HISTORY MUSEUM APPOINTMENT.—It is stated that Dr. A. Barton Rendle has been appointed to be keeper of the Herbarium in the British Museum, in succession to Mr. George Murray, who recently retired from the post on account of ill-health. Dr. Rendle has served as an assistant in the botanical department of the Museum for a period of [illegible]6 years.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending January 13, 1906:—

1906.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 A.M.			Rainfall.	Sunshine.	
	At 9 A.M.		Day.	Night.							
January 7 to January 13.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-foot deep.	At 4-foot deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	42	40	49	37	33	41	43	44	Tot 1·10	3	28

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending January 13, is furnished from the Meteorological Office:—

The *weather* was extremely unsettled in all parts of the Kingdom. Rain was general, and at times heavy, but there were several fair intervals, especially over England and Ireland. Thunderstorms, with hail, were experienced very generally in the south-west of Ireland and the southern counties of England on Tuesday, at Portland Bill on Wednesday, at Glencarron and Laudale on Friday, and at Blackpool and Aberystwyth on Saturday.

The *rainfall* exceeded the average in all districts both in frequency and amount. Except in the east of Scotland and north-east of England the excess was large.

The *temperature* was a degree below the average in Scotland N., but in all other parts of the Kingdom it was again above the normal, the excess in England S. amounting to as much as 4·6°. The highest of the maxima, which were recorded on rather irregular dates, ranged from 54° in England E. and 53° in several other districts to 45° in Scotland N. The lowest of the minima occurred on the 7th in Scotland, but much later in the week over the Kingdom generally; they were as low as 23° and 24° respectively in Scotland N. and E., and elsewhere ranged from 27° in England S.W. to 33° in England N.W. and to 36° in the Channel Islands.

The *bright sunshine* exceeded the average duration over Ireland and in most parts of England, and equalled it in Scotland and in England N.E. and N.W. The percentage of the possible duration varied from 12 in Scotland N. and 14 in Scotland W. to 35 in England E. and to 37 in England S.

THE WEATHER IN WEST HERTS.

Warm and showery weather.—The first day of the year was cold, but since then there has not been a single unseasonably cold day or night. For the last eight days the highest day temperatures have been remarkably uniform, varying only from 46 to 48 degrees, or from 5 to 7 degrees warmer than is usual at this, the coldest period of the whole year. The ground temperatures are now unusually high for the time of year, being 3 degrees higher at 2 feet deep, and 4 degrees higher at 1 foot deep, than is seasonable. As far as the present month has yet gone, there have been only three days without rain—the aggregate fall for the 16 days being 3 inches, or half an inch in excess of the average fall for the whole month. During the same period 14 gallons, or nearly the whole of the rainfall, has come through each of the percolation gauges. The past week was a very bright one for January—the dullest month but one of the year. The sun shone on an average for over 3½ hours a day, or for more than two hours a day longer than is usual. The wind continued moderately high throughout the week, the direction being almost exclusively some point between south and west. The mean amount of moisture in the air at 3 o'clock in the afternoon was as much as 10 per cent. less than is seasonable for that hour. Saxifraga apiculata was first in flower in my garden on the 15th inst., which is a remarkably early date, and several weeks earlier than in either of the two previous years. *E. M., Berkhamsted, January 17, 1906.*

TRADE NOTICES.

Mr. EDWARD SLATER, late gardener for 10 years to Sir R. M. BROOKE, Bt., Norton Priory, Runcorn, has purchased the Padgate Nurseries, Warrington, Lancashire, and will enter into occupation on February 1.

Mr. A. DIMMOCK, who has represented the firm of Messrs. F. SANDER & SONS, St. Albans, for 25 years, and has spent a large portion of that time in the United States of America, has been appointed European Agent for the YOKOHAMA NURSERY CO. OF JAPAN and for Messrs. SUZUKI & IIDA, of 31, Barclay Street, N.Y., U.S.A., wholesale importers and exporters of bulbs, seeds and nursery stock.

ENQUIRY.

MENTO [?] BOILERS. Can any gardener who has been using one of these boilers give me his opinion of them, with respect to heating power and length of time the fire will last after each "stoking up"? Also what sort of fuel will last longest—best anthracite coal or coke?—*J. C.*

ANSWERS TO CORRESPONDENTS.

Beech Coccus: *T. H. W.* Thoroughly scrub the infested bark with petroleum emulsion, or with a mixture of soft soap and caustic soda. Work the insecticide well into the crevices of the bark, and any other parts where the insect may be in hiding. You can perform the work at the present time. Use the caustic soda with care, and remember that gloves should be used when spraying with this strong alkali.

Bees and Cucumbers: *G. H. S.* All the harm the Bees are likely to do to the Cucumbers is that by their agency the flowers may become properly fertilised and produce a quantity of seeds. As cucumber "fruits" will often swell perfectly without fertilisation of the ovules or young seed having taken place; it may possibly be considered a disadvantage if they are made to produce numerous seeds. In no other way can we explain your neighbour's somewhat unreasonable grumble.

Books: *Constant Reader.* The book you mention has just been published. Apply to our publishing department.—*A. C.* *A Synopsis of the British Mosses,* by Chas. P. Hobkirk, F.L.S. Apply to our publishing department.—*F. E. F.* In *Johnson's Gardener's Dictionary* the names of the plants are accented, with a view to showing how each should be pronounced, and this may be sufficient for your purpose. In the Appendix to Nicholson's *Dictionary of Gardening* there is a very useful chapter on this subject.

Camellia Buds Failing: *F. S.* Without knowing all the circumstances of the case we can only suggest that your flower buds failing is due to the roots having suffered a check. Although you are satisfied that the plants have not been allowed to become dry, you may possibly have kept them too wet for a time, and a check from this cause would be quite as disastrous as one from drought. When Camellias are full of strong growths, unless the supply of water is restricted at the time when the flower buds should set, they are apt to push all their energies into growth, and the flower buds suffer in consequence. The quantity of water which these plants require, especially in the growing season, makes it necessary that the soil in which they are grown should be of such a character that it will not become too close and compact. When you top-dressed the plants last spring, did you interfere with the roots? Camellias are somewhat impatient of disturbance at their roots.

Chironia ixifera: *Jeannot.* Increased attention has certainly been given to this pretty plant during the last few years. Chironia ixifera can be had in bloom at any time during the summer and autumn months, but is not suitable for flowering in winter. If young growing shoots are inserted in an ordinary propagating frame, in well-drained pots or pans, containing either sand exclusively, or fine peat and sand mixed together, they will soon make roots. As soon as these cuttings have made roots pot them into small thumb pots and use a compost of good fibrous loam and peat in equal parts adding a liberal quantity of silver sand; cultivate the plants in an atmospheric temperature of 60° at night, and shade them from bright sunshine. Spray them occasionally and let the atmosphere of the house be maintained in a moderately moist condition. Repot the plants, as soon as they are ready, into 54 or 48-sized pots. The latter are large enough for the plants when in flower, unless specimens are required for exhibition. The same kind of compost as already mentioned may be used at the final potting. A temperature of 55° at night will be high enough after the plants have made this progress, but it may be allowed to increase during the day. A higher temperature would tend to induce too much growth. At the same time if the plants are required to flower at any special time they may be afforded rather more heat after the buds have formed. Do not allow them to suffer at any time from want of sufficient water, but provide them with shade from bright sunshine during the middle of the day, or the thrips will soon become troublesome and cause the narrow leaves to [illegible] which would give to the plants an unattractive appearance. When the pots have become filled with roots, a little Clay's Fertiliser or weak liquid manure or even clean soot water may be applied. The stimulant will impart a dark green tint to the foliage and a deeper colour to the flowers. If plants are grown in 60-sized pots they will make bushy little specimens and flower freely. Such plants can subsequently be cut down, kept moderately dry through the winter months and be repotted early in spring; they will then come into full flower in May. Pinch out the points of the shoots as often as required to produce bushy shaped plants, and after placing a neat stake in the centre of each plant sling the side shoots to this by means of fine shreds of raffia which have been stained a green colour.

Eucharis Mite: *A. A. Mc.K.*—In our experience the bulb mite has only attacked Eucharis bulbs when owing to some cause the bulbs have become weak and the outer scales partially decayed. This particular pest may be found in almost any kind of bulbs if serious decay is present, and it undoubtedly hastens the destruction of the bulbs. The best preventive, therefore, is to treat the plants as naturally as is possible in our glass-houses, and so maintain them in a vigorous condition. If decay has already set in and mites are numerous, do not waste time in trying to kill these latter, but rather burn the stock, disinfect the house, obtain fresh bulbs, and endeavour to keep them in a healthy condition.

Gypsum: *A. G. P.* This substance is sulphate of lime containing water in combination. Pure gypsum contains 32·5 per cent. of lime, 46·5 per cent. of sulphuric acid, and 21 per cent. of water. Plaster of Paris is prepared from gypsum by burning, which drives off the water it contains. But for agricultural purposes gypsum is used in its natural condition. This material, like other forms of lime, furnishes directly the element calcium and exerts a favourable solvent effect upon the soil. It was formerly used in large quantities, particularly for crops of Mustard, Turnips, Grasslands, Potatos and Clover, at the rate of about 1,000 lb. per acre, sown during the winter or early spring. It is believed that its favourable effect is due not so much to the direct addition of lime, as to its action upon insoluble potash compounds in the soil in setting free potash. Thus the application of gypsum causes an increase of crop, because of the potash made available. Should the soil be light and sandy, and thus contain but little natural potash applications of 4 cwts. kainit or 1½ cwt. muriate of potash per acre must be given with the gypsum, otherwise but little beneficial effect will be produced. Gypsum is also useful to spread over floors of poultry-houses, stables or heaps of farmyard manure to absorb the ammonia gas given off in the decomposition of the animal excrements, to be afterwards spread and ploughed into the soil.

Mealy Bug on Vines: *Gardener.* The following treatment is recommended by Mr. H. W. Ward, author of *The Book of the Grape.* Smear the Vines with a mixture of coal tar and clay, using one part of the former to nine parts of the latter. The clay should be dried and powdered, so that it may be passed through a quarter-inch sieve. Then mix the tar and clay together in the proportions named above, afterwards adding sufficient boiling water to give it the consistency of ordinary paint. Apply the mixture by means of a stiff paint brush to every crevice in the bark of the Vines, including that on the spurs. This is a very old and effective method of destroying bug.

Mushrooms: *M. Liddiard* and *H. G. M.* The disease is not due to the spawn, but is caused by a fungus called *Hypomyces perniciosus*, which was probably introduced with the soil or manure. If the disease has spread much, the only means of preventing its continuance and attacking other beds is to remove all the soil and manure, and thoroughly disinfect the house by spraying every part with a solution of sulphate of copper —one pound of sulphate to 15 gallons of water.

Names of Fruits: *J. C. T.* Bramley's Seedling. —*Saltmarsh.* We cannot recognise your Apples. Certainly they are not the varieties you mention. Our opinion is that they are local sorts.

Names of Plants: *C. K. E.* 1, Pinus excelsa; 2, Probably the Deodar cedar, but we cannot tell without seeing the tree.—*W. S.* 1, Adiantum cuneatum grandiceps; 2, Adiantum macrophyllum; 3, Selaginella Mertensii; 4, Lygodium scandens; 5, Pteris longifolia; 6, Adiantum tenerum.—*C. W.* 1, Begonia manicata; 2, Begonia nitida; 3, Begonia Weltoniensis; 4, Begonia prestoniensis: 5, Begonia fuchsioides; 6, Codiæum (Croton) aureo-maculatum; 7, Codiæum angustifolium.—*F. W. C.* Aira caespitosa, Windlestraws or Snizzle-grass.—*F. E. F.* Send better specimen.

Notice to Leave: *Perplexed.* We believe that the notice may be tendered on any day of the week, and after 12 o'clock mid-day. In the case of a second gardener who is paid weekly, a week's notice should be deemed sufficient, always, of course if no agreement has been made to the contrary.

Oncidium serratum with inflorescence 21 feet in length: *E. D.* It is not uncommon for Oncidium serratum and some other Oncidiums to produce the long trailing flower-spikes you mention. They continue the growth of the inflorescence throughout the dull weather which is not favourable to the production of flowers and afterwards bloom in summer and autumn.

Pine Shoots Diseased: *G. E.* Although we have not been able to discover the actual insect there is little doubt but that the injury to your trees is the work of the Pine Beetle, Hylurgus piniperda. The following remarks are condensed from Miss Ormerod's book. The female appears in April or May, and begins her operations by boring a hole through the bank, beneath which she forms a tunnel along which she lays her eggs. The maggots soon hatch and eat their way forward beneath the bark. They are about a quarter of an inch long, and white, except their extremities, which are ochreous in tint. The maggots turn to pupæ at the ends of their tunnels, from which the beetles are developed in July and August. These come out and fly to neighbouring trees, where they may be found in September in great numbers, boring into the young shoots and causing great injury. Clearing the infested shoots from the trees in summer or from beneath them in winter is one means of preventing recurrence of attack. The removal of thinnings, pieces of felled Pine or other Pine rubbish beneath the bark of which the beetles will tunnel and form their maggot nurseries is also necessary. The removal of the bark should not be permitted within the plantation. The beetles lay their eggs on trees which have only lately been felled, or on decaying standing trees, and these should therefore be removed. Beetle-traps can be laid in the plantation and are thus arranged: cut in the autumn a quantity of young Scots Pine tops and thin off all the branches. Lay these props about the young plantations, or up against the lower part of the standing trees, so that the under side will rest on the ground, because the beetles will not lay their eggs on damp, wet wood. Collect these props in the month of June or sometimes earlier and you will find present under the bark a great number of the beetles.

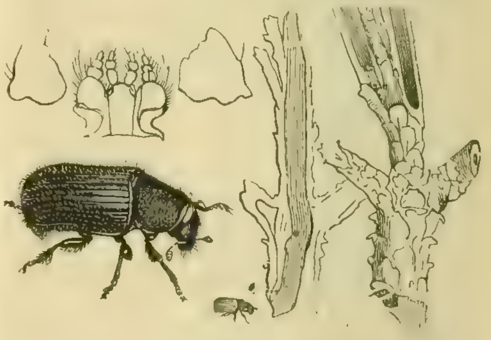
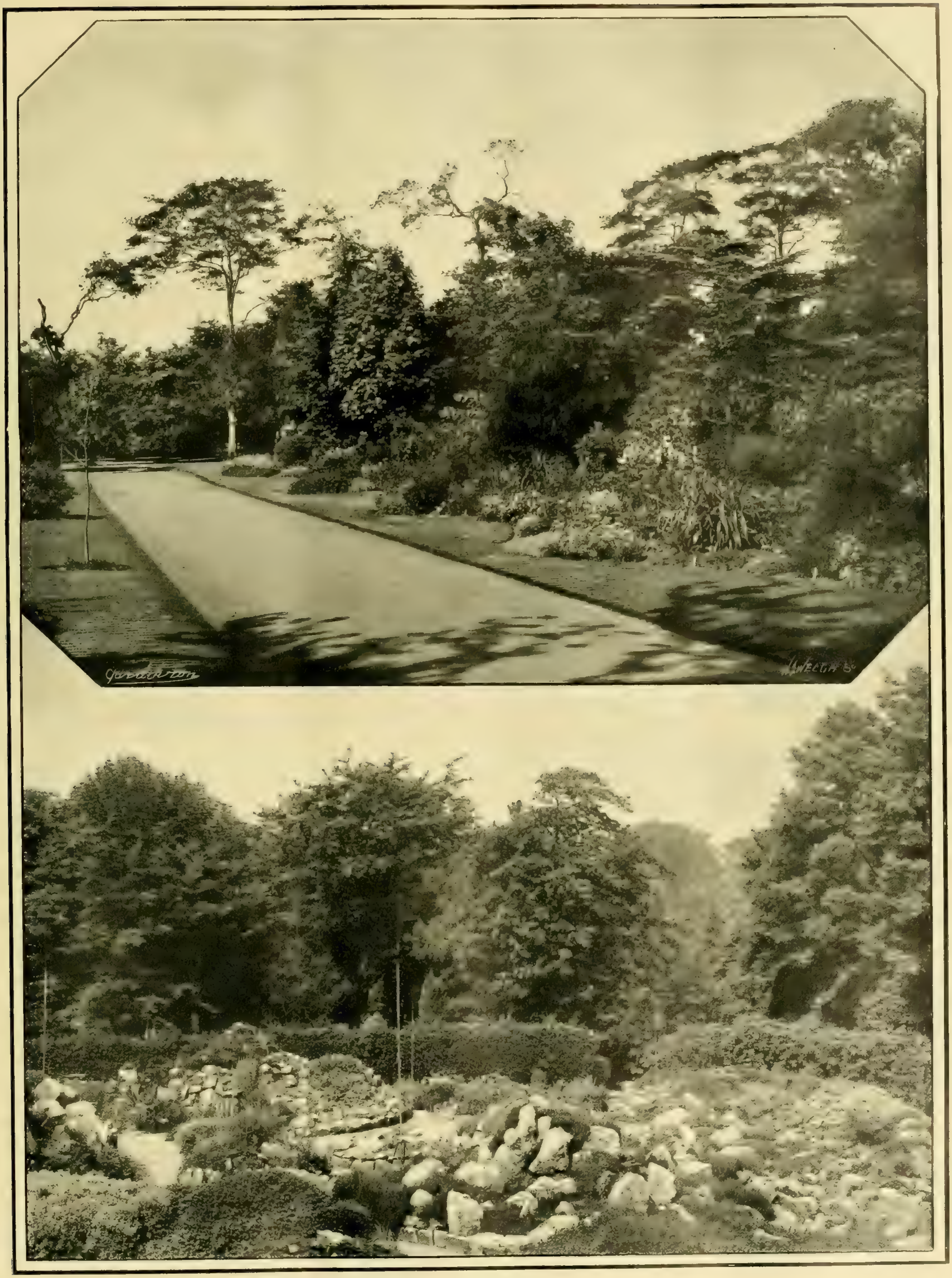


Fig. 25.—The pine beetle (Hylurgus piniperda).

Tomatos: *F. E. F.* Shake the plants a little during the warmest part of the day to disperse the pollen, or touch each flower with a rabbit's tail bearing pollen attached to a small stake. Tomato flowers usually set easily enough later in the season, when there is more sunshine, and the houses are given freer ventilation. We cannot name the plant unless you send a better specimen.

Communications Received.—W. E. G.—C. T. D.—J. H.—J. H. V.—D. R. W.—J. G.—C. J.—B. C.—H. W. W.—J. C. N.—T. H.—Wright (telegram.) We made no such statement—De B. C.—A. D.—W. J. B.—A. D. B.—O. S.—B., Erfurt—J. W. B.—T. V.—Foreman—G. G.—J. J.—R. R.—W. C.—R. P.—W. K.—C. R.—C. P.—A. O.—A. D.—Mrs. S.

For Market Reports, see page xx.



VIEWS IN THE ROYAL BOTANIC GARDEN, EDINBURGH.

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ODONTOGLOSSUMS:
PAST, PRESENT, FUTURE.

THE last four years have been so remarkable for the introduction of fine forms of both species and hybrids that it makes one think somewhat wonderingly of what my third sectional heading may have in store for us. Careful observers time after time have said, "We have reached the top, there *must* be a fall in price." This meant more a waning of the taste for them than the financial depreciation the words conveyed, but neither the one nor the other have come to pass in a general sense. Here and there, from special causes, temporary retrograde movements take place, but what is the consequence? The succeeding wave overflows the former one, and another wave effaces the temporary trough.

The taste in Odontoglossums has changed of late years as compared to what it was in the days of 25 or 30 years ago, for now the heavily blotched forms are the most-sought-after, whereas then, the fine unspotted forms were considered the more beautiful. There may have been very good reasons for this want of taste for the spotted forms, for as there were but very few of them (and these were not all of good shape) it did not fall to the lot of all to see them; but slowly, though surely, the spotted forms came to the front, first in the hybrids Andersonianum and Rückerianum, and then a little later in the spotted and blotched crispums.

From 1880 to 1885 the natural hybrids were much in vogue, the rosy and coloured forms being highly valued. Then in 1886 began the great wonders of high-priced Odontoglossums, and the Orchid world was wondering what would come of it.

We all have to thank Baron Schröder for "leading off" in that year by the purchase of O. excellens Knox's var. at Stevens' Rooms on April 14, 1886, for 165 gs. This was then called a "yellow Pescatorei," and constituted the first well-known hybrid at a "high price." The Baron followed it up by buying Odontoglossum crispum apiatum at Protheroe's Rooms for 160 gs. upon April 19, 1886. Shortly afterwards Sir Trevor Lawrence purchased a plant at Protheroe's Rooms on June 4, 1886, for 150 gs., which became O. crispum burfordense.

Then things were pondered over, and nothing similar occurred for a long time; but the ball had been started rolling with a will, and it has never since stopped, and shows no indication of stopping—indeed, it is gathering force annually, and if one "pusher" drops out, there are always a ready two to take his place (and his plants also).

The demand for "spotted crispums" began growing, the supply came also, and to-day it is going on merrily; the appreciation of the hybrids became less owing to their narrower segments, and to-day, in comparison to a fine crispum, unspotted or spotted, they are nowhere, and deservedly so, as form is the paramount factor in all flowers. There is another good reason why the natural hybrids could not in many instances possess good form: it is very improbable that an insect should take the pollen of O. gloriosum to the flower of a good variety of O. crispum, as it only seeks honey and not the making of hybrids. We do the reverse; we seek hybrids not honey (we can get that after from the conversion of the good hybrids into cash); hence our garden hybrids will be always finer in the aggregate than the natural ones.

To do ample justice to the Odontoglossums of the present day would need a very long article, but in a review necessarily short as this must be, it is only necessary to name a few of the actual leaders of the genus. It is an invidious task to compare the great gems, therefore I place them alphabetically: apiatum, Baroness Schröeder, Cooksonae, F. K. Sander, Franz Masereel, Luciani, Pittianum, Roger Sander. Though these eight contain some that might be considered of the past section, they hold their own easily among the fine ones of to-day, and, to quote the prices these seven have realised gives us a range of from £168 in apiatum to £1,500, the price commonly spoken of and said to have been paid for F. K. Sander.

It may be fairly said that the plants of to-day are pre-eminently the blotched crispums; but they must possess extremely fine form and fine markings to be able to command these high values.

Whilst considering the present, the garden hybrids come to the front, in such a manner that anyone who observes carefully the signs of the times can see that they will form the great future of the genus. In Cattleyas and Cypripediums, it has been, so Odontoglossums will follow, and the hybrids in a great measure will displace the species, always excepting the fine varieties (of the species) which will be more and more needed to create new hybrids and infuse new blood, as in the case of all other breeding of either animal or plant life.

The first hybrid of great note, of course, is O. ardentissimum, which we all know approaches in its best form very nearly to a finely blotched crispum. O. Vuylstekei, O. Vuylstekeæ, O. Rolfeæ, and O. Smithii take front rank at present. The range of value here is upwards of £425, but the most remarkable have not changed hands.

We all know that in Orchid-raising there is no finality for the hybridist, his cry being always "Better things are coming," and up to the present he has not been far wrong, though, of course, the art is only yet in its very infancy; but if it goes on for, say, 20 years, with the relative improving ratio of the last 10, well, what will there be then for the hybridist of that day to cry? I hope I may be there to hear him and help him, as now, cry out, "Better things will come." That the future has some marvellously fine things in store goes without saying. The crosses made and young plants resulting contain a wonderful harvest of fine things for us all, and as each year goes by more care is taken to cross only what will give a good result, profiting by the experience of past failures, of which I am sorry to say some raisers do not speak; if they did so, it would be to the general benefit of all others.

Some may say that I could have condensed this article by simply stating that I considered the future of Odontoglossums lies in the hands of the hybridist. I do not hesitate to say "You are quite right, I do," for certainly it does, he will always need the fine imported forms, but after a time the worse natural forms will be less and less required, except occasionally by those who prefer to have a good variety, and by beginners, and the cut-flower or market traders; for who will take the trouble to grow and bloom thousands to get 10 or 20 worth having when he can raise them and have certainties from every pod he sows; but here again no one need think each one in a pod is going to be a fine variety. There will always be reversion, but there *must* be some good ones; whereas in imported plants there *may* be a fine variety, but there *must* be hundreds quite worthless either for commercial or amateur tastes, and in these days it is difficult to say which is the more fastidious.

In considering the future, we conjecture the possibilities of even finer things than we are now used to, but we have, even at present, a very large mass of information which, if carefully examined, will give a good idea of what we may expect. The self-colours, if brilliant, seem to appeal to the majority of colourists, although we admire leopard-like arrangements in Odontoglossums, and no one will dispute the fact that we should all go more or less mad if we obtained either a scarlet or a blue crispum—of course, I mean a blue crispum of fine form. The one colour is undoubtedly possible, though it may not be for all of us who are now working to see it. The accession of red in Odontioda Vuylstekeæ furnishes a parallel case, and as soon as some one gets a good pod upon crispum crossed by Cochlioda Noezliana, the first step will have been gained and the rest will only be a process of time.

The probabilities of obtaining a blue crispum are much further away; but many years ago the introducers of the blue Primrose might have been considered bereft of their senses had they prophesied they would be able to produce one. In Odontoglossum Smithii we have a deep violet ground colour, the result of the rose in O. Rossii being acted upon by the cyaneous-brown of O. Harryanum, even though it had passed through the white of O. crispum.

If the violet of O. Smithii could be acted upon by the red of C. Noezliana, we ought (theoretically) to obtain a bluish or cyaneous shade. If, perchance, one of these seedlings were to be crossed by a very lilac-suffused ardentissimum, there is no telling what might be the result, and, perhaps, by the time this seedling is ready to cross there may be other useful things ready for the hybridist of that day. Violet has been produced, blue may follow.

An article on the future without any reference to the garden-raised blotched crispum would be incomplete and wanting in an essential point, for all of us are doing our best to raise this much-sought-for plant in quantity. I say in quantity advisedly, for it has been done, but if only one now and then appears we shall still be where we are at present. It is amusing to see those who hold quantities of very valuable plants attempting to destroy their value by producing them artificially. The reason is, I think, that none of us believe we shall succeed so as to damage the value of our present blotched crispums.

Hybrids between fine forms of blotched O. crispum and O. ardentissimum will not yield a pure blotched crispum, though they will doubtless be near to it. Sentiment will keep up the value of a natural crispum in a measure, and the difficulty of producing a garden-raised one will also help, as though a hybrid (of possibly very complex parentage) in my opinion, it is in quite a different category to a direct hybrid like Wilckeanum, which anyone who likes can create.

The last two years have seen the linking up of the chain by the production of a hybrid between a Colombian Odontoglossum and a Brazilian Cochlioda, as well as a Mexican Odontoglossum and a garden-hybrid (the produce of two Colombian species). These two great "breaks away" are a grand pair of "first footsteps" of horticultural interest, for though it is not the first time that Mexican and Colombian species have been united (it having been effected in 1902 in the hybrid Pescatoreo-cordatum which I have seen and consider as only of botanic interest), O. Smithii is the first true international Odontoglossum of any note.

Contemplating the work done already and considering the many intelligent workers there are both here and upon the Continent, who will say that "the future" does not contain a vision of hybrids that will possibly, may probably, make some of our present-day wonders look quite ordinary things? I have no doubt we are upon the threshold of a great advance in Odontoglossum raising, and I wish all possible success to all who are diligently working with the same object in view as I am—improvement in this all-absorbing study and pursuit. *de B. Crawshay.*

WAINSFORD, LYMINGTON.

THE view represented in our illustration at fig. 26 was taken from the gardens at Wainsford, Lymington, the residence of Mrs. E. Powell King. These gardens have been greatly improved and enlarged during recent years by their late owner, E. Powell King, Esq., a devoted garden-lover, who spared neither labour nor expense in his endeavours to make his garden beautiful, but he unfortunately died at a comparatively early age. A part of the gardens was, five years ago, merely a piece of rough field. A fountain now stands in the centre of this portion of the grounds, and is surrounded by flower beds, borders, and pergolas, the whole forming a charming retreat. The basin of the fountain is composed of an old granite cider press, which was brought over from Guernsey for its present purpose, for which it is well adapted. A pathway composed of large stones leads to a rose garden, the paths through which are also made of old paving stones with box edgings.

Fig. 26 shows a portion of the original garden, which was re-arranged during last winter, when the wall with the archway in it was built. This wall is faced with stone on either side, the interior being filled with soil, to allow of plants ramifying in the sides and also at the top. In the foreground of the picture is part of a lily pond. There is an open well at the junction of the paths shown, but this was hidden by a bed of Heliotrope seen near the figure, at the time the photograph was taken. The greater part of the residence also was hidden by trees from this point of view, the one in front being a fine specimen of the Evergreen Oak. *R. W. D., Wainsford.*

FLORISTS' FLOWERS.

EXHIBITING CHRYSANTHEMUMS.

I QUITE agree with the remarks on p. 332, Vol. XXXVIII., that boards for exhibiting cut blooms should be dispensed with, but it will take time to eliminate them, as old customs die hard. An exhibitor having a "shady" bloom in his exhibit has not much chance of escaping detection when the flowers are displayed in vases or as small groups of cut blooms with foliage and plants, for then every bloom is thoroughly exposed to view, while this cannot be said of flowers shown on boards.

One often sees at Chrysanthemum shows eight or ten stands of 24 Japanese blooms, all presenting a great sameness. How much nicer these would look were they displayed on longer stems with plants and foliage intermixed, each exhibitor having a space of, say, 8 feet by 4.

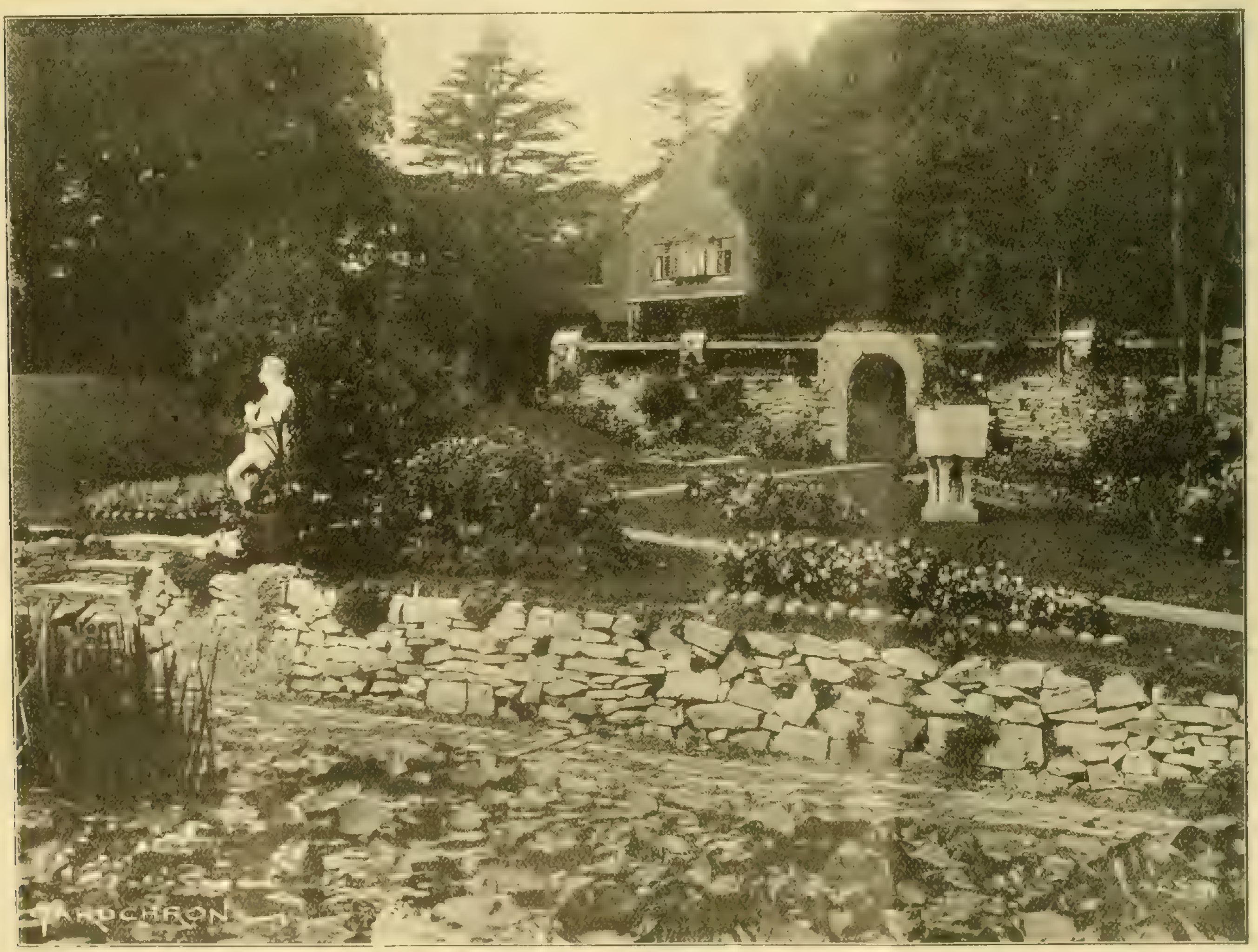

FIG. 26.—VIEW IN THE GARDENS AT LYMINGTON, HANTS, SHOWING A NEWLY-CONSTRUCTED WALL-GARDEN IN THE BACKGROUND.

Now is the time for Chrysanthemum societies to take these matters in hand, for there is scope and need for originality. *A Grower.*

CHRYSANTHEMUM, BARON DE VINOLS.

This variety is one of the prettiest and most effective for decorative purposes or for groups, but as yet it does not seem to have found its way into English collections. I have several times admired it abroad, where it is largely used as a front row plant in collections in pots. Of medium size, it is a stiff petalled Japanese of deep rosy amaranth colour, with pure white points. It has sported several times, Mme. George Barré, rosy bronze, and Dr. George Barré, of deep rich purple amaranth colour, being the two best of its offspring. *C. H. P.*

THE ROSARY.

ROSE CULTURE UNDER GLASS.

Experience, they say, has to be bought, and generally at a dear figure. It is good, no doubt, to gain experience at one's own cost, for, in such cases, the first expense is probably the last, but it is far better, if one can so arrange it, to purchase one's knowledge at the expense of somebody else. Some years ago, at considerable cost to my own pocket, I bought and essayed to grow a number of Maréchal Niel Roses, and subsequently discovered that my property consisted rather of dearly-bought experience than of Roses. Of the former I had a good stock, of the latter very few. But I believe that my money was well spent, for, if I paid for my lack of knowledge and foresight in the first instance, I had a good stock of wisdom for later efforts in the same direction, and ultimately my attempts were crowned with very respectable success. In the hope therefore that what I have learned may be of interest to others, and save them to some extent from falling into the errors which I committed, I should like to tell, as briefly as I can, the story of my experiences as a grower of Tea-roses under glass.

I will not pretend that any one can nowadays make any considerable profit in the matter of Rose-growing, although I believe that there are worse things done in these degenerate days than Rose-growing. The foreigner, who has the climate that we in England cannot command, is of a necessity a severe competitor, more so to-day than he was some ten or twelve years ago, when I made my first attempt at growing flowers for market. Roses, by which I mean really good Roses, not the poor little shrivelled-up things that are not worth the picking, are still marketable, but if they are to sell at remunerative prices they must be of the very finest quality, in order to compete with those which the foreigner sends over here in hundreds of dozens at a time. It really costs no more, in the long run, to produce a good article than a bad one, because whereas the best article will obtain the best price of the moment, the slightly inferior product will fetch practically nothing in comparison. Of this latter class the market always has plenty, and the cost of producing them is almost as much as in the case of that of the finest. Indeed, there are instances in which the inferior product may have cost the grower quite as much in hard cash, because in his eagerness he is often induced to employ certain expensive means, which, being overdone, do more harm than good to his crop. The general principles of successful Rose-growing under glass are in the main similar in all cases, but it is the attention to small details, and an ever-watchful supervision that lead one on the road to success.

The very first mistake which I made was to buy my Roses—Maréchal Niels—at a sale. They cost about one and sixpence each, but several of them were not worth the value of the pots they grew in. For the first winter I kept them in pots, which, as I learnt later, were much too small, and the plants made practically no growth during the first year. The following autumn I planted out the survivors at intervals of a few feet in two glass houses—100 feet by 14 feet each, and about 10 feet from ground to ridge of roof in the centre of the middle pathway. These houses, which were really too high for their width, were used for Tomato-growing in the summer, and for Arums and Chrysanthemums in the winter. It is perfectly possible to grow these crops with Roses if they are properly arranged, the only drawback being that the Roses do not get a rest at any time of the year, when the house is constantly heated during the colder months. They will, however, do fairly well for a few years, even without this annual rest, but their life is, I believe, shortened thereby. Only three out of several dozen of my Roses did any good at all after being planted out in borders. The soil consisted of a good fibrous loam, and was about a foot in depth, made up on a hard subsoil, partly clay and partly sandstone. The rest of the trees either stood still or died, and had to be replaced. Those which grew, however, did well, and made a great deal of young growth, which, as the veriest beginner knows, is essential to a good crop of blooms of nice size and quality. One of these trees in particular thrived amazingly. In a single season it sent out little branches of forty feet in length in one direction, and, in the other, two of about twenty feet. Its stem increased in the meanwhile from about the thickness of one's little finger to a circumference of eight inches. But it soon reached the subsoil of sour material, became cankered, and died, as did the other two. For two or three reasons, however, these three trees produced a profusion of bloom, and the largest of the trio yielded an average of over a thousand marketable buds for two seasons of its existence. The trees were liberally fed as soon as they began, in February, to make new growth, with top-dressings of old stable manure and occasional applications of artificial fertiliser. The result of my first experiment, which was of course by no means a success as a whole, showed me what could be done by better attention to certain points in the future, and, as a result, my subsequent efforts have been distinctly more encouraging.

My advice, therefore, to anyone who wishes to grow Tea-roses under glass, either for profit or pleasure, is summed up in the following directions: Content yourself with one or two varieties at first, say, Maréchal Niel and Niphetos—two of the best to grow, from every point of view. Prepare within your house, the dimensions of which do not particularly matter, so long as it is of fair size, a good deep border of any loam of good quality, with plenty of fibre in it, and some sound red clay mixed therewith if you can get it; if not, the loam alone will do. Previous to making up your bed, which should be not less than eighteen inches in depth, you must break up the subsoil roughly to the depth of a foot, and if there is no natural drainage, this must be supplied by laying down a quantity of old brickbats, large stones, or clinkers from the furnace. Mix some old rotten manure with the soil—one part of the former to five of the latter, and plant your trees firmly therein at their original depth. In the case of a lean-to house, the Roses will do better if planted on the lower side, and trained up over the roof towards the wall, but in a span-roof house you will train them towards the middle from either side. The young shoots as they appear should be trained along the wires running from end to end of the house, at a distance of some eight inches from the glass. The trees are best purchased from a respectable nurseryman, and should be selected by someone who knows what he is buying. Choose those which show signs of active growth, and be sure that you get the ones which you have selected. You should avoid any plants which have been in pots too long which show signs of stunted growth. Once planted, attention to temperature, ventilation, watering, and pruning cover the chief points of cultivation. Planted in the autumn, your trees should never be allowed to put out growth of any consequence till the following January at the earliest, and if all heat can be dispensed with till then, so much the better. The thermometer, with fire heat only, should never rise above 60 degrees Fahr. at first, nor over 70 degrees later on. As soon as the young dark-coloured growth begins, and the spring sunshine raises the temperature of your house, the fire must be damped down during the middle hours of the day, and a light shading of limewash or tiffany will be necessary. Of air your Roses must have plenty whenever the outside temperature is not too low or damp, but direct draughts will do irretrievable damage in the way of mildew, which is always difficult to check once it has started. Watering must be done, whenever needed, with tepid water, and the roots of the plants must never be allowed to suffer for want of moisture. You must remember also that they spread a long way from the stem of the tree. Your trees will require no pruning beyond cutting back the blooming stems after flowering to within a couple of eyes of the main branch, and thinning out old wood wherever you can. Canker, that bugbear of the Rose-grower, will overtake your trees sooner or later, but if you have a good reserve of young trees coming on in large pots, you can replace any tree directly it shows a falling off in health. And, finally, if you follow as nearly as you can the foregoing directions, always at the same time remembering that the greatest of all blessings to the gardener as to others is common sense, your crop of Roses every spring from the latter end of February to the end of April should be the admiration of all beholders, whether you try to turn an honest penny by them or distribute them among your friends. *East Sussex.*

TWO HYBRID ROSES.

Coloured figures of two hybrid Teas are given in the December number of the *Rosen-Zeitung.* Hermann Raue is a pale yellow Rose flushed with pink. It was sent out by P. Lambert in 1904, and is the offspring of a cross between "Grand Duchess Victoria Melita" and "La France of 1889." Contessa Lurani is also a hybrid Tea of deep rosy pink colour.

FRUIT REGISTER.

GOLDONI NECTARINE.

The craze for large fruits is possibly the cause of this variety being not more often seen. Having grown it amongst a collection of 20 varieties, and having given it a fair trial in different aspects, I have nothing but praise for it. The tree is a good grower, has a robust constitution, and bears freely, the fruits being of medium size and of a bright orange-yellow colour, streaked with crimson. The flesh is very rich and juicy. Goldoni was introduced by Messrs. Rivers, and is certainly one of the most valuable of the many varieties of Nectarines raised by this firm. *W. H. Clarke, Aston Rowant, Oxon.*

APPLE MANX CODLIN.

I have endeavoured to propagate many varieties of Apples from cuttings, but have succeeded only with the above-named variety. Last year

I had a full crop on two bushy dwarf trees that I raised from cuttings a few years ago. These trees are particularly healthy, and the really handsome, clean fruit ripened in September to a lovely yellow colour under a red exterior on the sunny side. With liberal manurial aid, these trees promise all that could be wished, and I see no reason why any number of trees should not be raised in the same manner. Manx Codlin, as an early culinary Apple, certainly merits the attention of growers.

APPLE COCKPIT.

In the garden at Stillington Hall, ten miles from York, where I served my apprenticeship, several standard trees of this Apple were planted forty-five years ago in a grass orchard, and the trees invariably bore heavy crops of fruit. Visiting this garden in September last, after an absence of thirty-six years, I found the same Cockpit Apple trees in a still flourishing condition, the long semi-drooping branches being plentifully covered with fruit. The value of an Apple like Cockpit, during a season such as the past, when the Apple crop was almost nil in parts, is extremely great, and the variety is worthy of consideration when planting. As the fruit ripens the colour changes to yellow. It is a good kitchen variety in use during November and December. *E. M.*

NEW AND NOTEWORTHY PLANTS.

GERANIUM PLATYANTHUM,

Duthie n. sp.*

A very handsome Chinese species allied to *G. eriostemon*, Fischer. The erect stems, which sometimes grow to a height of 3 feet, are densely clothed with white spreading hairs and with many gland-tipped hairs on the inflorescence and its branches. The lower leaves have very long petioles and are usually five-lobed, whilst the uppermost are almost sessile and often only three-lobed; the lobes are broad and coarsely toothed, and the under surface of the leaves is densely clothed with grey appressed shining hairs. The corolla is 16 lin. in diameter, and of a beautiful rose-purple colour. The horizontal spread of the petals gives the flower a strikingly flat appearance. Plants were raised last summer by Messrs. J. Veitch and Sons from seed collected by Mr. Wilson in W. Hupeh (No. 1948), and near Ta chien lu in W. China (No. 3298). It is a taller and more hairy plant than *G. eriostemon*, the leaves are not so deeply cut and the lobes are broader; the peduncles are shorter and stouter; the flowers are larger, the corolla much exceeding the calyx, and the petals are broader and flatter; it may also be distinguished by the hairs on the ovary and lower portion of the valves being tipped with bright red glands. *G. platypetalum*, Franchet in Plantæ Delavayana (1889), p. 777, may, from the description, be distinguished from *G. platyanthum* by the retrorsely appressed hairs on the stem, the reflexed pedicels (after flowering) and by the much smaller flowers.

CYPRIPEDIUM ALCIBIADES MAGNIFICUM.

The most remarkable feature of this truly handsome flower (fig. 27) is the great width of all its parts. As will be seen on reference to the figure the dorsal sepal is broadened to such a degree as to become almost rounded in shape, while the squat, broadened lip is in keeping with the anterior sepal. It is the result of a cross between C. Leeanum giganteum and C. Mons de Burt, and was shown by Major Holford at the meeting of the Royal Horticultural Society, on the 9th inst., when it received a First Class Certificate.

The large dorsal sepal is white, with an emerald green base, and dotted lines of purple. The petals and lip are yellow, tinged and marked with purple brown colour.

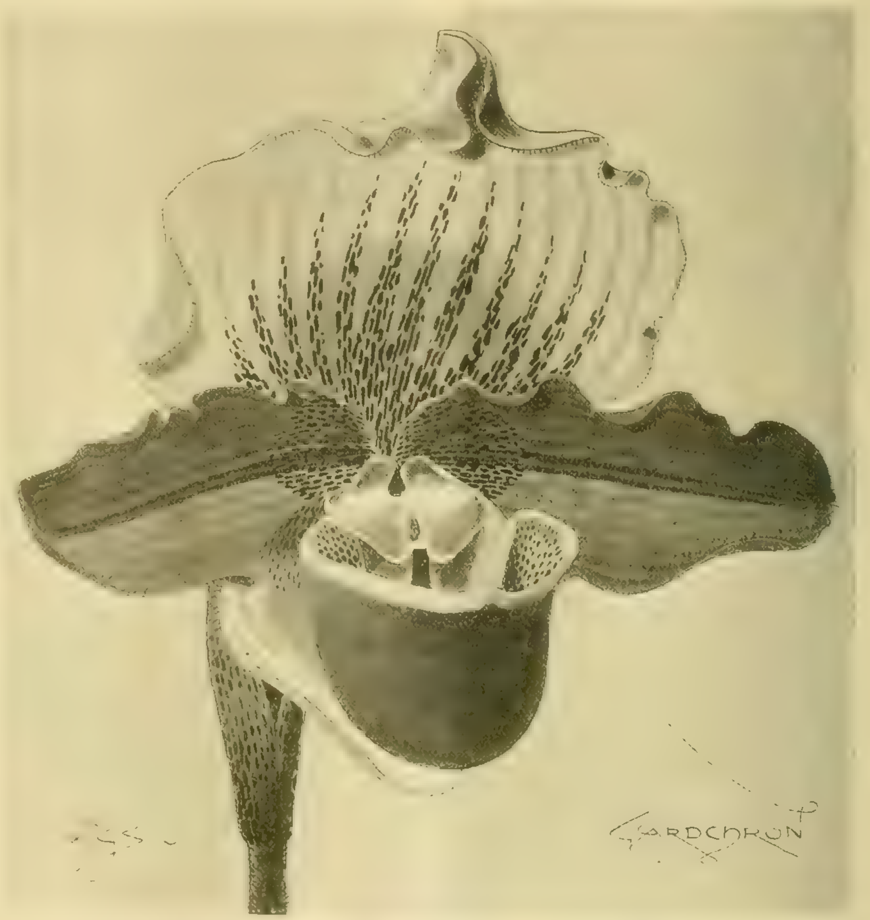

Fig. 27.—Cypripedium × Alcibiades magnificum, as exhibited by Major Holford at the Royal Horticultural Society's meeting on January 9.

LEGISLATION WITH RESPECT TO PLANT DISEASES CAUSED BY FUNGI.

In some recent numbers of this journal, an article appeared entitled, "Legislation and the Spread of Plant Diseases caused by Fungi." In this article, professing to deal with the general question of the possibility of employing legislative means against fungus diseases of cultivated plants, Mr. Massee cites a number of specific diseases, and claims that in many of these preventive legislation would be impracticable.

The object of the present paper is to consider some of these cases; to show that certain of the assumptions made are unsupported; to correct a serious misstatement made in connection with a recently-introduced Gooseberry disease; and, finally, to refer to some of the legislative steps taken by several Governments acting on the advice of plant pathologists of high scientific authority.

I will consider now the cases quoted first by Mr. Massee, viz., the following six diseases: (1) The wheat-rust; (2) the maize-smut; (3) the hollyhock-rust; (4) the bean-rust; (5) a fungus attacking lucerne; (6) a fungus attacking Verbena. These cases are given as instances of "diseases that appear when the host-plant is introduced to distant localities, even to a new continent, where the fungus was not known to exist previous to the introduction of its host-plant." Mr. Massee states further: "A point of importance in connection with the above examples is the fact that in every instance the introduction to a new country must necessarily have been by means of seed," and tells us we may accept "without doubt as the true solution" the supposition that the spores of the fungus causing the disease "were imported along with the seed, adhering to its surface."

We may first ask whether the cases chosen may be regarded as representative of fungus diseases against which plant pathologists have recommended legislation; and, secondly, whether there is really scientific proof of this introduction into foreign lands of new diseases by means of seed. It will be worth while to examine the cases separately.

(1) The wheat-rust fungus is often found in a vegetative state within the coats of the wheat grain.

(2) The maize-smut is one of the Ustilagineæ, a group of fungi peculiar in producing its spores in the ovary of the diseased plant; when ripe the spores disperse, and adhere to neighbouring seeds.

Cases (1) and (2), then, may be regarded as quite exceptional, since the fungus chosen is one specialised as a seed-inhabiting fungus.

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* Geranium platyanthum, n. sp. Caudex adscendens, sublignosus. Caulis 2-3 ped., erectus, siccitate sulcatus et subangulatus, patule pilosus, superne glandulosus. Folia ambitu late reniformia, 5-7 poll. lata, e basi ad apicem 2-4 poll., supra adpresse pubescentia, subtus dense canescenti-villosa, ad medium 3-5-lobata, sinubus acutis; lobi ovato-oblongi, interdum obscure 3-lobulati, grosse inciso-dentati, dentibus cuspidatis; petioli inferiores ad 1 ped. longi, dense pilosi; stipulæ binæ, 9 lin. longæ, ad basim 5 lin. latæ, caudato-acuminatæ, marginibus ciliatis. Pedunculi duo vel plures, axillares; folia floralia bina, superioria sæpe valde diminuta et sessilia; pedicelli dense glanduloso-pilosi, in fructu erecti; bracteæ binæ stipulis similes sed multo minores. Alabastra ovato-elliptica, nutantia. Sepala 7 lin. longa, 3 lin. lata, elliptico-oblonga, cuspidata, 3-5-nervosa, externe pilis glandulosis canescentia. Corolla 16 lin. diametro; petalis omnino patentibus, roseo-purpureis, basi rotundato-quadratis, ad apicem integris aut interdum sub emarginatis; unguiculâ minimâ, imâ barbatâ. Filamenta gradatim deorsum dilatata, dorso, versus basim, pilis longis candidis munito. Ovarium pilis nitidis rubro-capitatis densis obsitum. Carpella (cum rostro) 1·5 poll. longa, valvulis patentim glanduloso-hirsutis, rostro 10 lin. longo, pilis brevioribus sursum directis. Semina non visa. *J. F. Duthie, Kew.*

(3) The hollyhock-rust. Prof. H. Klebahn—an authority on the *Uredineæ*—to whom I applied for information—states that the exact manner of the first introduction of this disease into Europe is still an unsolved problem.

(4) The bean-rust. Mr. Massee states that he found this species on French beans grown at the Botanic Station, British East Africa, and assumes that rust-spores must have been sent out with the bean seed to Africa. No proof, however, that this really occurred is given; and it may be pointed out that it is quite as likely that the fungus in this case is indigenous to Africa, and that it has spread to the cultivated beans from some allied indigenous wild plant—just as "it is almost certain that the coffee-leaf disease passed on to cultivated coffee from a native wild plant." (See Massee, "Text-book of Plant Diseases," p. 28.)

(5) The lucerne fungus referred to is, I presume, Uromyces striatus. I can find no evidence given anywhere that it has been introduced to foreign lands in the manner assumed.

(6) The Verbena fungus referred to is (as I happen to know from material received at the same time), the conidial (Oidium) stage of one of the Erysiphaceæ, probably Erysiphe Cichoracearum DC. In this case it is certain that Mr. Massee's assumption that introduction into Australia took place by means of spores adhering to seeds is incorrect, since it has been proved that the summer spores lose their power of germination in a few days. Moreover, as E. Cichoracearum is a cosmopolitan species, it is only reasonable to suppose that in this case nothing more has happened than that the fungus has spread from some native host-plant to the cultivated plants of Verbena.

Three of the last four cases belong to the rusts; the fourth must certainly be excluded from the category in which it is placed. Now, the view that rusts, on account of their wide distribution, are among the fungus diseases which cannot be reached by legislation was very clearly put forward in 1897 by Prof. B. T. Galloway (Chief of the Division of Vegetable Pathology, U.S. Department of Agriculture), in some remarks to which I shall refer again later.

We shall obtain no clear view as to what could be effected by legislation, if we confuse together, as Mr. Massee has done, diseases which are practically cosmopolitan, with those which appear first as epidemic diseases confined to definite areas. It is the stamping out of the diseases of the latter class, and the prevention of their introduction or re-introduction, which lie within the province of legislation.

Mr. Massee writes: "Packets of a dozen kinds of seeds purchased at random were carefully examined, and in four instances spores of the fungus well known as causing a disease on the plant in question were obtained from the seeds." To what fungi did the spores belong? Were they spores of fungi causing local epidemic diseases, such as those against which legislative means have been employed, or have been recommended? Without the names of the fungi being given, the statement can carry little or no scientific value.

The further statement that "apple-tree mildew" cannot be detected when the apple foliage is not present, "as the mycelium of this fungus hybernates in the branches," is not supported by the observations I have made on this disease. There are always present in winter some external signs of the disease, if not in the presence of black fruit-bodies, then in the form of more or less conspicuous hybernating superficial patches of mycelium. No scientific proof has yet been given that the mycelium enters the tissues of the branches.

I must now refer to the statements made in connection with a dangerous disease recently introduced into Ireland. Writing on this disease, Mr. Massee remarks: "The point is, was it (1) introduced on living plants in its fully-developed conspicuous condition, in which case it could not have escaped the eye of an official on the look out for diseases? Or (2) did it come under the form of spores adhering to the plant, which in due season produced the disease? In the latter case no official, however observant, could have detected its presence. To state that if legislation on the point had been in force the disease would not have entered Ireland is only the expression of an enthusiast, and will not bear criticism."

I have carefully studied this disease, and followed the course of the outbreak in Ireland since it occurred in 1900; and I have, in an article just preceding Mr. Massee's in this journal, as well as on several occasions in the Journal of the Royal Horticultural Society, advocated prompt action by the Authorities, and the employment of legislative measures to stamp out the disease.

I state here again emphatically that if legislation, such as that employed against this disease by other countries at the present time, had been in force, the disease would almost certainly have been prevented from entering Ireland. That stage of the fungus, viz., the stage in which the fungus is carried about by naked spores adhering to the plant, assumed above (2) by Mr. Massee, does not, as a matter of fact, occur in the life-history of the fungus. In the whole group of these mildews, the resting spores are enclosed in conspicuous fruit-bodies throughout the winter, and are not to be found as isolated spores adhering to plants; only in the spring at the moment of infection are the resting spores of the fungus liberated.

Further, in the case of the present disease, the fungus is distinguished by possessing persistent superficial brown mycelial patches, in which the fruit-bodies enclosing the winter spores are embedded. These brown patches of mycelium are superficial on the young wood, and being conspicuous the disease can easily be detected.

Hence Mr. Massee's assumption that no official could detect the disease on imported stock is quite unfounded; his failure to ascertain the life-history of the fungus seems to show that his article was written from a preconceived opinion that legislation in this case, as in other cases quoted by him, is impracticable.

And here, in a few words, I should like to recall the main facts concerning the outbreak of this new disease threatening Gooseberry growers in Europe. The disease was first observed in 1900, in a garden in Ireland; by 1904 it was established in nine localities in six counties. In spite of repeated warnings, which I gave in several papers, published in 1900-1905, dealing with this dangerous disease, no systematic attempt has yet been made by the Authorities to stamp out the disease in Ireland, or to prevent further importation of diseased Gooseberry bushes.

At the present time the disease still flourishes in the very same garden in which it was observed in 1900.

Let us remember that the danger in connection with this disease, which now confronts Gooseberry growers, is no problematical one. The disease has proved year after year in the United States, and in Europe every year since its introduction, to be a most devastating one. In my previous articles the extracts I have given from a number of Bulletins of various American agricultural experiment stations, also from the report of the Commissioners of Agriculture, show that the mildew is the one great enemy of the Gooseberry in the United States. In Bulletin No. 39 of the Idaho Agricultural Experiment Station, just received, Prof. L. F. Henderson writes of the mildew as "one of the three most serious diseases of fruits" in that State; and makes the following observation: "Eight or ten rows of Gooseberries were planted on our station ground several years ago, and I am perfectly safe in saying that from that time till 1903 not a single crop of fruit was gathered, owing to the presence of the mildew." In the Year-book of the Department of Agriculture (United States) for 1899, in an article on "Progress of Plant-breeding," an account is given of how the American Gooseberry growers were forced to give up the cultivation of the European Gooseberry on account of its susceptibility to mildew, and have had to depend upon raising improved strains of native American species, which are much less susceptible to the disease.

This Gooseberry disease is now reported in Europe from Ireland, Russia, Denmark, and Germany. During last June it was discovered in Sweden; the Government of that country decreed immediately a temporary prohibition against the importation of foreign Gooseberry plants and Gooseberries. I have received within the past few days a communication that the disease has now appeared in Finland, and that legislation on the same lines is to be at once employed.

In the case of the coffee-leaf disease, caused by the fungus Hemileia vastatrix, strenuous measures were taken by the Government to control the disease and prevent its introduction into the West Indies and into Africa. Will nothing be done to stamp out the Gooseberry disease in Ireland—where it constitutes a standing menace to the English grower—and prevent any further importation of diseased Gooseberries? *Ernest S. Salmon, South-Eastern Agricultural College, Wye, Kent.*

(To be continued.)

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Cattleya Trianæ.—The many beautiful forms of this species now coming into bloom will require to be kept moist at the root until the flowers are fully developed. C. Schroderæ is just beginning to show its flower buds at the base of the sheath, and will also require more water at the root. When the flowers have been cut of the following hybrids now in bloom: C. Octave Doin, Lælio-Cattleya Charlesworthii, L.-C. Illustræ, L.-C. Myra, L. Haroldiana, Brasso-Cattleya Queen Alexandra, B.-C. Orpheus and Brasso-Lælia Mrs. M. Gratin, let the plants be kept rather on the dry side until growth recommences. Congeneric species and hybrids that are making new growth should be afforded sufficient warmth, light and moisture to enable them to complete strong flowering pseudo-bulbs that will flower well. C. gigas, C. Dowiana and its variety aurea appear to require exceptional treatment. Immediately these plants start into growth they should be elevated so that their foliage almost touches the roof glass of the house, for the more light they can get without strong direct sunshine, the more likely are they to produce flowering growths. Water must only be afforded in small quantities until the new growths have attained a considerable length, and the flower sheaths are perceptible, when the amount should be increased, and each plant be given a good watering when the soil has become sufficiently dry. Do not keep the compost in a saturated condition, or the old roots may decay.

Cœlogynes.—Plants of the useful species C. cristata, also its varieties Lemoniana and holoeuca, will now be coming into bloom. Before the flowers are open a thorough watering of weak liquid cow-manure will greatly assist the plants during their flowering period. When the flowers have commenced to open very little water is then needed, for if kept too moist at the roots the flowers are apt to damp off. C. pandurata is just commencing to grow, and may be repotted if necessary. It is a strong growing species and requires considerable space to root in and abundance of water until growth is completed. When repotting the plants cut away all useless back pseudo-bulbs, two being quite sufficient to support each leading growth. Afford plenty of drainage material and the plant will succeed very well if potted in the usual mixture of peat and sphagnum-moss. As regards temperature, a moist warm corner of the East Indian house is the most suitable for this species. The hard, shining leaves are often attacked by red spider, and they should be sponged often and periodically. The same atmospheric temperature will also suit C. Meyeriana, but this species succeeds best when planted in a shallow basket, and owing to its scandent habit, it is necessary to train and peg down each rambling rhizome on to the surface of the compost. Both species require to be shaded from the sun.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to F. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Azaleas.—Examine the stock of these, and remove any sour soil or moss there may be on the surface over the roots of any plant; afterwards apply a top-dressing of a compost consisting of peat, sand, charcoal-dust, and finely broken crocks, mixed well together. Much benefit will be derived from this top-dressing, for the roots will be more active at the time when the plants need additional support as they are developing their flowers; the flowers will be found to have much more substance and colour than those on plants which are not so treated. Any plants that may have got into a starved, stunted condition through inattention to potting or from overflowering (a frequent cause of impoverishment in Azaleas), should be denuded of their flower buds for a season. Afterwards place the plants in an atmospheric temperature of 70°, and so soon as growth has commenced repot the plants, and return them to the same warm atmosphere, where they should be syringed freely. By this treatment the plants may be thoroughly renovated by the flowering season.

Lapagerias.—The roots of Lapagerias are now becoming active, and any plants requiring potting or replanting should be given early attention, for if left until spring there will be risk of damaging the young shoots and roots. The securing of drainage is most important, for the plants require copious supplies of water during the summer months. Insufficiency of the water supply to the roots is the cause of many failing to grow and flower this plant successfully. Frequent applications of liquid manure and soot water—the latter especially—are very beneficial, and the soot water is distasteful to slugs, which are so fond of the young shoots.

Achimenes.—These plants are too often cast aside by plant growers. The first batch of tubers should now be started, and if successional lots are introduced until the end of the month of May, they will ensure a continuance of bloom. When the tubers have made shoots an inch or two in length, transplant them into the pots, pans, or baskets in which they are intended to flower. Basket culture is the best for producing effect, and if the different colours are mixed, the result is all the more striking. The plants delight in much heat, moisture, and partial shade from sunshine when making their growth, but when in bloom they may with safety and good effect be removed to the greenhouse or conservatory. A compost of peat and leaf-mould in equal parts, with well decomposed sheep manure added, also some sand, will be found to suit them best.

General Remarks.—Another batch of Hippeastrums (Amaryllis) should be started in an intermediate temperature. It is not necessary to plunge the pots in bottom heat at this time, as they will readily respond to the extra heat afforded. Continue to bring forward into gentle heat bulbs of various kinds, also plants of Lilac, Spiræas, Deutzias, Azalea mollis, Clematis, and Rhododendrons, all of which will be required to keep the conservatory gay from now onwards. Plants growing in rockeries or underneath the fronts of stages should be thoroughly cleansed during next month, at the same time adding a little fresh material to the roots. Take advantage of an evening when the weather is calm to fumigate all plant-houses, thus preventing insects from establishing themselves early in the season.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Pines.—Successional plants should not be allowed to become very dry at their roots, therefore those that are plunged near to the hot-water pipes will require daily attention in this matter. Maintain a steady bottom heat of 75°, and an atmospheric temperature at night of 60°.

Early Fig Trees in Pots.—Those that were removed to the forcing house at the beginning of December will soon be unfolding their tender leaves, and will require plenty of water both at their roots and in the atmosphere; otherwise red spider will be almost sure to attack them. If it is convenient to plunge the pots in a bed composed of leaves, which would give a temperature of 75° to 80°, this will encourage quicker root action, and the fruits will swell more rapidly. The atmosphere of the house should be kept at a temperature of 68° by day and 60° at night, admitting a little air whenever the weather is favourable, but closing the house early in the afternoons and syringing the trees immediately afterwards.

Permanent Trees.—It sometimes happens that a house cannot be set apart exclusively for the culture of Fig trees, and in such cases one has to use the back walls of Vineries and Peach houses for the purpose. The trees will succeed very well on the back walls of Vineries, providing their roots are kept within bounds, and this can in most cases be accomplished by building a brick wall, or by using thick slate slabs to confine the border. Narrow and shallow borders are far preferable to large ones, which tend to promote thick, sappy, and unfruitful growths. It must be remembered that when Fig trees are planted in Vineries and Peach houses they will have to be subjected to the same temperatures as the Vines and Peach trees; therefore plant them in houses where the conditions are likely to be most suitable. Later trees should now be thinned out a little, leaving the fruit-bearing shoots 8 or 9 inches apart, for their large leaves when fully developed require a great amount of space. Afford the roots a topdressing consisting of loam and old mortar rubble, with about 3 inches of cow manure to finish off with.

Strawberries in Pots.—The first batch of these that were started in December in a temperature of 45° at night should now be placed on a shelf well up to the glass, and be allowed 10° more warmth at night, and 15° by day, giving them twice a week a little weak manure water, which will greatly assist the flower scapes to get well above the foliage. Syringe the plants on all favourable occasions until they get well into bloom, when the foliage and flowers should be kept in a drier condition, and at the same time a little more air may be admitted to the structure. Pollenise each individual flower with a camel's hair brush every day at noon until 5 or 6 fruits are set on each plant, after which the other flowers should be cut off without delay, in order to induce the remaining fruits to swell more rapidly. Strawberry plants give a much better yield if some manure from an old Mushroom bed be run through a riddle (½ inch mesh) and be placed on the shelf for them to stand on. Roots then emerge from the bottom of the pot into and feed in this soil, which also acts as a store for moisture, and thus secures a double benefit.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Mint and Tarragon should be lifted and boxed up in readiness for placing in an atmospheric temperature of 55°. The heat may be lessened after a start has been made, in order that the produce may become strongly flavoured. The best way of meeting the demand for these herbs is to propagate cuttings in frames in August (if a clean, healthy stock can be got) and to grow these young plants in 6 in. pots. It is surprising the amount of growth they will produce throughout the winter when grown in an atmosphere of intermediate temperature. The difficulty in August is to get cuttings of mint that are clear of rust, the presence of which would be fatal to this method of procedure.

Horse Radish.—A fresh plantation should be made yearly of horse radish. Lift the old plantation and select long straight pieces of roots. Make holes with a bar on well-trenched ground and place one piece in each. The lines should be made at 2 feet apart and the cuttings inserted at 9 inches distance from each other. The strong crowns can be stored away behind a wall or in any cool place for use when required. There is no comparison between well-grown roots that are straight and fleshy and the old stunted pieces that result from growing the plants too long without replanting.

Mushrooms.—Continue to collect daily from the stables all the horse-droppings and place them over the floor in a dry shed. When sufficient have been collected to form a bed, put the whole together in a conical heap to ferment, and at the same time cover them over an inch or so deep with loamy soil to help absorb the ammonia that would otherwise escape into the atmosphere. A few half-decayed leaves are an excellent addition when droppings are scarce, and especially helpful are these leaves to the spawn when running through the bed. I have often noticed the spawn clinging to these. Turn the heap over several times before it gets too hot, otherwise many of the good properties will be lost. In forming the bed be careful to spread the manure thinly and equally all over in order that the heat may rise regularly. Make the materials as firm as possible by trampling or by other means when it is not convenient to tread them. When the heat of the bed has risen to its highest degree and has fallen again to 85 degrees, insert the pieces of spawn at 9 inches apart and immediately cover with good soil. We use roughly-chopped-up turf with good results, but it is well beaten down. An atmospheric temperature of 55 to 58 degrees is a very suitable one, but more heat than this shortens the duration of the crop. An excellent substitute for heating by hot-water pipes may be provided by a succession of hot beds, which give off just the kind of heat best suited to mushrooms.

Lettuces.—Successional sowings must be made regularly. Sow the seeds in boxes at present, as the plants can then be easily shifted about. Any seedlings requiring to be pricked off should be given attention without delay; prick them into rich soil in boxes. Select such varieties as Commodore Nutt and any of the small-hearting Cabbage varieties which begin to "head-in" early and are much appreciated in early spring. Sowings of Cos varieties may be made now with every prospect of success. Plants from these sowings will be in fine condition to plant on to hot-beds during February.

Radishes.—Sowings of these may be made regularly on hot-beds; also on ground where Potatos have been planted. The Radishes may be sown broadcast, for good roots may be had in this way without interfering with the Potato crop.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Bedding Begonias.—The great improvement which has taken place in the varieties during the last few years, together with the recognition of their complete hardiness for growth outside during summer, has caused the tuberous-rooted Begonia to become a feature in every garden where summer bedding is practised. The rich colours of the flower, the profuse blooming of the plant during the months of June, July, August, and September, the ease with which plants can be raised from seed, and the convenient way in which the tubers can be stored during winter, all contribute to the popularity of Begonias as bedding plants. Easy of culture, Begonias possess another advantage over many other plants in their adaptability to a wet summer, for although the plants enjoy bright sunshine, yet they give unstintingly of their wealth of flowers even in a dull, moist season, when the majority of flowering bedding plants are unattractive. When allocating the position of the Begonia beds in the flower garden scheme it is advisable to choose one which has full exposure to the sun, but at the same time endeavour to secure one in which the plants will be protected from the prevailing winds. The growths being soft and brittle are apt to be broken if wind-swept, and the drying effects of such winds are inimical to the best culture of the plant; therefore, precautions should be taken to guard against them. The preparation of the beds, if not filled with spring-flowering plants, might very appropriately be done at the present time. The special requirement to attain the best results in Begonia culture is plenty of good, well-matured farmyard manure. It is most important that in preparing the beds the first consideration shall be given to providing this in quantity. Leaf-mould and sand should be added if the soil in the beds is in any degree inclined to be heavy. Tubers that have been stored away during the winter should, at the present time, be carefully examined and cleaned. Two or three weeks hence will be time enough to place them in shallow boxes filled with leaf-mould, leaving the crowns exposed and placing the boxes in gentle heat to start the tubers into growth. When the shoots have grown an inch or so in length, the tubers must be taken out of the leaf-mould and potted up singly, in a compost of loam and leaf-mould in equal portions, with sufficient sand to keep it open. The size of the pots must depend upon the size of the tubers. For some time after potting, let the plants be grown in an atmosphere of intermediate temperature, and as near to the glass as possible to prevent them being drawn. As soon as numerous roots have been formed, supply the plants with abundance of water, but be careful to ascertain that each pot is well drained. By the month of May they will be growing strongly and freely, and should be removed to cool frames, where though avoiding cold draughts, plenty of air must be afforded them, and at the same time care should be taken that they never suffer through becoming dry at the roots. Treated thus, by June they will have formed sturdy, robust flowering plants fit for planting out in the beds prepared for them.

Raising Seedlings.—From the present time until the end of February seeds may be sown for increasing one's stock of Begonia. Good unnamed varieties raised from a reliable strain of seeds are every bit as valuable for bedding out as the best named sorts. Sown in colours, and in quantity, the seedlings can be reassorted correctly into distinct colours, when they show flower in the first year, and then grouped suitably for any colour arrangement for the summer bedding in following years. Sow the seed in well-drained pans of finely-sifted loam and leaf-mould in equal proportions, adding some coarse sand and making the surface even and flat before sowing. The soil should be watered previous to the sowing, and afterwards, when necessary to apply water, it should be done by dipping ping the pans into a tank, allowing the moisture to reach the surface of the soil by capillary attraction. This is preferable to running the risks accruing by direct applications of water from a pot, no matter how fine the rose that is used may be. As the seeds are extremely small, great care must be exercised to distribute them thinly and evenly on the surface. To achieve this, a good plan is to mix them with some fine silver sand. After sowing, cover the pans with glass, shade them with paper, and plunge them in a slight bottom heat in an atmospheric temperature of about 70°. When the seedlings appear, expose them gradually to light and air to prevent their becoming drawn, and when large enough to be handled, prick them out into fresh pans. Continue to grow them on in moderate heat and near to the glass, but take care to protect them constantly from bright sunshine. About April they will require transplanting into single pots. In July and August many will show flowers, and the plants can be sorted into colours as above suggested.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Red Currants.—Young plants having a stem of 7 inches and consisting of three or four shoots should be cut back to three or four eyes on each shoot from which two shoots should be encouraged to grow. If the plants are standards, prune the shoots back to three eyes and keep the main stem steady and straight by affixing a stout stake. Those planted against walls should be pruned back to three or four buds and the terminal growths nailed up straight. Young trees may be pruned back to three eyes and the centre shoot fixed perpendicularly to the wall, the shortened shoots on either side being trained in a horizontal position.

Black Currant Bushes.—These should now be taken in hand, and if any mite (Phytoptus ribis) is present, pick off all buds that have swelled above the normal size and burn them. If the bushes are very badly affected it will be better to root them up and burn them. Very little pruning is necessary, but the bushes should be kept in good shape by systematically removing some of the oldest wood, which requires to be replaced with new growths. When the work has been done rake up and burn all the rubbish, and afterwards apply a good dressing of lime over the ground, dusting the trees with lime at the same time. Black Naples, and Carter's Prolific are good varieties. In making a new plantation, it would be prudent to trench another plot of ground in a different part of the garden.

Pear Enemies.—If the trees were attacked last season by the Pear midge (Diplosis pyrivora) or the ermine moth, steps should be taken to cleanse them in the following manner. Obtain a good insecticide—XL-all is very good for the purpose—and syringe every portion of the tree with insecticide. A home-made remedy may be made up as follows: Dissolve about 7 or 8 lbs. of soft soap in 7 gallons of boiling water; to this add ½ gallon of petroleum and stir them well together, making it up to 27 gallons by adding rain or other soft water. This should be mixed together thoroughly, and be afterwards applied vigorously all over the tree by means of a syringe, wetting every portion. If the trees are growing against walls, get a scrubbing brush and scrub behind the main trunk of the trees. If this solution be well worked into all holes and crevices, the caterpillars and chrysalids will be destroyed. Should any of the trees have suffered from red spider add 1 lb. of sulphur to the above mixture. Another application may be given the trees in April just before the flowers commence to open.

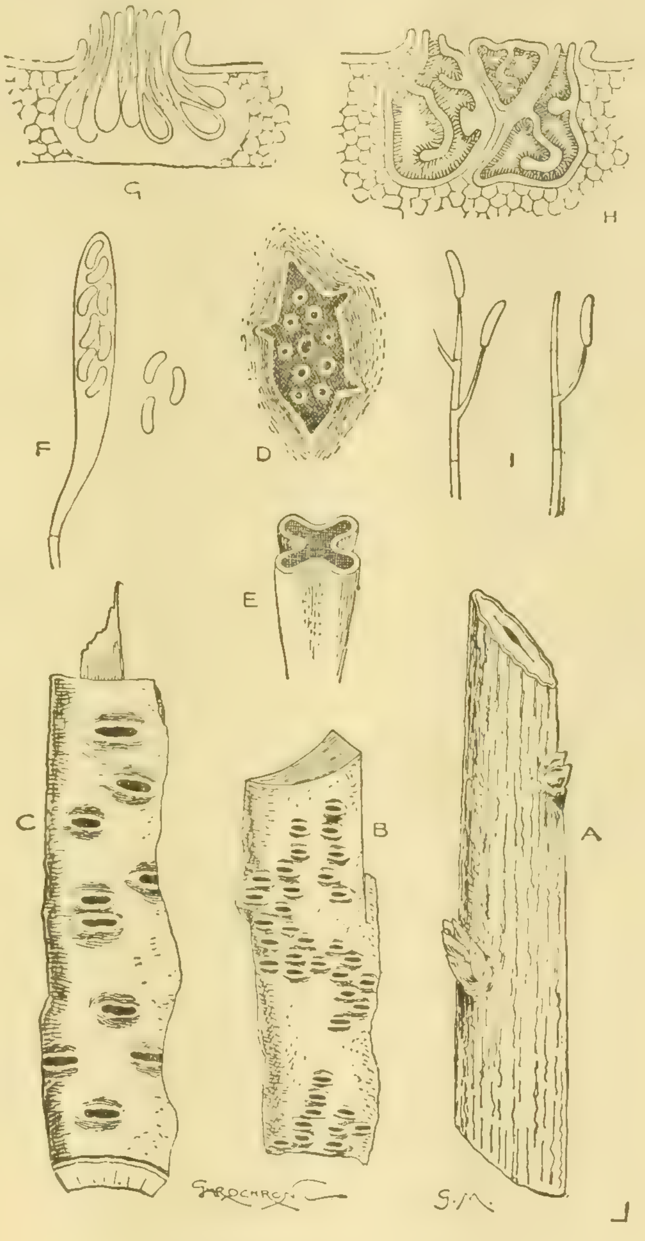


Fig. 28.—EUTYPELLA PRUNASTRI.

(See paragraph in "Hardy Fruit Garden" Calendar.)

A A young Peach branch becoming shrivelled, indicating that the stock is dying. (Natural size).
B The conidial stage of fruit bursting through the bark. (Natural size).
C The second or ascigerous condition of fruit showing at the surface through transverse cracks in the bark. Natural size).
D Surface of view of the second form of fruit, surrounded by the ruptured bark (× 40).
E Cruciate mouth of a perithecium. (× 400).
F Ascus and spores. (× 400).
G Section through ascigerous form of fruit. (× 80).
H Section through conidial form of fruit. (× 50). Conidia (× 1,000).

Fungus Disease on Apple Trees (see fig. 28).—A disease has in recent years attacked the main stems of young Apple trees, especially those growing on a stiff or clay soil. The first symptoms of the disease is the premature decaying and falling of the leaves, followed by a drying up and shrivelling of the bark on the stem during the spring following, and minute cracks appear in the bark. The spores of the fungus are mature during late spring, and it is at this season that infection takes place. In order to prevent spores germinating on the surface or stem, paint the entire surface with the following solution: Take 4 lbs. of soft soap, 1 lb. of caustic soda, and 1 lb. of lime. Mix these thoroughly together in 5 gallons of soft water, and apply with a stiff brush.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations. *The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

APPOINTMENTS.

SATURDAY,	Jan. 27	Nat. Auricula Soc. (Northern Section) Ann. Meet. at Manchester. Dutch Gardeners' Soc. meet at Richmond.
THURSDAY,	Feb. 1	Linnean Soc. meet.
FRIDAY,	Feb. 2	Ann. Meet. Roy. Scottish Arboricultural Soc.
SATURDAY,	Feb. 3	Société Française d'Hort. de Londres meet. German Gardeners' Soc. meet.
THURSDAY,	Feb. 6	Nat. Amateur Gardeners' Assoc. meet.
FRIDAY,	Feb. 9	Ann. Meet. and Election of Candidates of the Royal Gardeners' Orphan Fund at Simpson's Restaurant, 101, Strand, London, at 3 p.m.
SATURDAY,	Feb. 10	Dutch Gardeners' Soc. meet.
MONDAY,	Feb. 12	U. Hort. Ben. and Prov. Soc. Com. meets.
TUESDAY,	Feb. 13	Ann. Meet. of the Roy. Hort. Soc. at 3 p.m. Committees meet at 12 noon.
THURSDAY,	Feb. 15	Linnean Soc. meet.
FRIDAY,	Feb. 23	Roy. Botanic Soc. meet.
SATURDAY,	Feb. 24	Dutch Cardeners' Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—38·9°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, Jan.* 24 (6 P.M.): Max. 40°; Min. 29°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Jan.* 25 (10 A.M.): Bar., 29·8; Temp., 49; *Weather*—Much rain.

PROVINCES.—*Wednesday, Jan.* 24 (6 P.M.): Max. 51° N.W. Ireland; Min. 37° Bury St. Edmunds.

SALES.

MONDAY, TUESDAY, AND WEDNESDAY NEXT—
Important Sale of Nursery Stock at the Nurseries, South Woodford, by order of Mr. J. Fraser, by Protheroe & Morris, at 11.

MONDAY NEXT—
Roses, Herbaceous and Border Plants, Lilies, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
Sale of Roses, Lilies, Shrubs, &c., at Stevens' Rooms, King Street, Covent Garden.

WEDNESDAY NEXT—
Herbaceous and other plants, Gladiolus, Lilies, Begonias, Spiræas, &c., at 12; Roses, Fruit Trees, Palms, Azaleas, &c., at 1 and 3, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY NEXT—
1665 c/s Japanese Liliums, Tuberoses, Lily-of-the-Valley, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 3.

FRIDAY NEXT—
Imported and Established Orchids in variety, also choice Hybrid Cattleyas, Lælias and Lælio-Cattleyas, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

FRIDAY NEXT—
Hardy border plants and bulbs, Roses, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

The Gardeners' Benevolent.

WHILST in many places on on the 18th inst. elections were taking place with the usual accompaniment of noise, reckless statements, counter assertions, and partisan prejudices, there was one election which was carried out with decorum and, we venture to say, absolute unanimity. Some were no doubt anxious for the success of one candidate, whilst others cast their votes in favour of another. But everyone admitted that all the candidates were worthy and duly qualified, and the only regret felt was that they could not all be elected. The election we refer to was that of the Gardeners' Royal Benevolent Institution. The annual meeting of the society was held after we had gone to press, so that we were not able to announce the results of the voting in our last issue. The chair was occupied by Mr. HARRY VEITCH, the treasurer. The attendance was not large, but the business was carried out with the usual mechanical precision. Resolutions were proposed, seconded, and carried *nem. con.* with little or no discussion. All felt that the society is doing excellent work and that the management could not be in better hands. Indeed, the officers and committee have earned the gratitude of the gardening community for their devotion to the interests of the society and the excellent way in which they carry out its management. The objections that we used occasionally to hear have been met by judicious alterations in the regulations, and no one can justly complain that any one class of candidate is favoured at the expense of another. No one can say that the Metropolis and its neighbourhood have a monopoly, for the candidates hail from all parts of the country. Moreover, the establishment of those two most excellent adjuncts—the Victorian Era Fund and the Samaritan Fund—afford an indication of the desire of the committee to meet, so far as possible, the needs and the emergencies of all classes. We should greatly like to see those special funds largely augmented, and we should be delighted to see the gardeners rallying round the society and co-operating to aid their less fortunate fellows to a much larger extent than they do at present. As things are, the society has still to rely on the antiquated methods of begging, at, and in connection with, a public dinner, and on, we can but consider, an objectionable system of voting. This system, which is prevalent in most similar societies, entails an unnecessary amount of trouble and expense on the candidates and their friends, and is a source of annoyance to the subscribers for weeks or even months before each election. A better plan, we venture to think, would be to abolish all personal canvassing and to allow the committee to select a certain number from the list of duly approved candidates, submit that list to the members of the society at the annual meeting for modification, rejection, or confirmation as the case may be. Differences of opinion in particular cases might, as now, be solved by the arbitrament of the ballot-box, if such a procedure were found necessary.

But, after all, these are matters of detail on which the subscribers are likely to hold different opinions; the general principles, on the contrary, are so unquestioned and so unquestionable that we most earnestly plead for increased assistance on the part of the gardening community.

A report of the proceedings will be found on another page.

OUR SUPPLEMENTARY ILLUSTRATION.—On September 9 last we published several photographic views obtained in the Royal Botanic Gardens, Edinburgh, together with a descriptive article by Mr. R. L. HARROW, curator, in which he referred to some of the more interesting features in that well-known botanical establishment. Our Supplementary Illustration to the present issue comprises two further views, and of these the lower one is specially noteworthy, as it shows a system in use at Edinburgh for bringing the atmosphere about the alpine plants on the Rockery into a more suitable condition for producing growth than would otherwise be the case during dry weather in summer. This is done by means of the jets of water shown in the picture, which are thrown so high into the air that the spray in descending is scarcely discernible, but which has the effect of keeping the atmosphere in a humid condition and of depositing moisture on the plants. The Rock Garden at Edinburgh is a famous one, and it is remarkable for some of the best specimens extant of certain species of plants; but during the past few years a needed improvement has been brought about by partially reconstructing the rockwork, and by the placing of larger and more irregular stones, at the same time taking away the small pockets so long in use. The view at the top of the page shows some of the shrubberies, faced with a border of herbaceous flowering plants. Trees, including certain Conifers, succeed well at Edinburgh up to a certain age, but afterwards nothing will keep them in good condition. Especially is this true of coniferous and other evergreen species. For the photographs we acknowledge our indebtedness to the courtesy of Professor BAYLEY BALFOUR, director of these gardens.

THE ROYAL GARDENERS' ORPHAN FUND.—We may remind the supporters and friends of this excellent charity that the annual meeting and the election of pensioners will take place at Simpson's, Strand, W.C., on Friday, February 9, at 3 p.m. The annual festival dinner has been fixed for Thursday, May 10 next, and will be held at the Hotel Cecil, Strand, W.C., under the presidency of J. GURNEY FOWLER, Esq., Treasurer of the Royal Horticultural Society. We hope that Mr. FOWLER will be well supported on that occasion, and that the event will be attended with success, as the holding of this dinner is one of the primary sources of revenue to a fund that exists for the relief of necessitous orphans whose fathers belonged to our own profession.

THE JOURNAL OF THE KEW GUILD.—The Kew Guild is a private society having no official connection with the garden. Its aim is to bind together in social co-operation those who have in former years been associated in the Royal gardens, and those who are still employed within its boundaries. Old "Kewites" are dispersed throughout the world, and but for the institution of the Guild they would have few or no means of intercommunication. As in former years one of the most interesting features of the present publication consists of extracts from the letters from the officials connected with various Colonial and other gardens. In a letter from Rhodesia complaint is made of tourist visitors to the Victoria Falls who are already busy in uprooting ferns and other plants. The writer says he is very rude to them when they are caught in the act, but we fear that hardened sinners of this description need some stronger measures to secure their conversion. Mr. T. W. BROWN tells us of Mr. RUNBERG'S Rose and Carnation houses near Chicago, where over 1,000,000 feet of space is devoted to the growth of the plants just named, and this is only one among "thousands." To get some idea of the magnitude of the cut flower trade one has only to walk through the stores of the wholesale florists at Chicago whence immense quantities of flowers are daily despatched to all parts of the States. To enable the Committee to supply the Journal to friends and others interested in its contents a few extra copies have been printed. These will be supplied at 1s. per copy, postage 2d. extra, on application to Mr. W. N. WINN, Secretary, Royal Gardens, Kew.

Royal Botanic Society.—The recent gift of £1,000 from a Fellow of the Society, in aid of its funds, has been followed by donations of two £100 debentures from Lord Lister, one of £100 from Mrs. Alfred Scorer, and £200 from Mr. C. Brinsley Marlay.

Honour for a Gardener.—We have learnt with pleasure, says *Indian Planting and Gardening*, "that, on the occasion of the royal visit to Agra, H.R.H. the Prince of Wales presented Mr. A. E. P. Griessen, Superintendent of the Taj and other Government Gardens, with a Victoria Medal of Honour. We congratulate Mr. Griessen on the honour conferred upon him. It is a fitting recognition of the excellent work he has done at Agra, but especially during the visit of the royal party to the famous Taj." What this medal may be we can only conjecture. It can hardly be the V.M.H.

The Garden Album and Review.—Once more we have to greet a newcomer in the ranks of garden-literature. The new publication is edited by Mr. John Weathers, and is to be published monthly at 7d. Nothing in this country has been issued like this journal since the cessation of *The Florist and Pomologist*. Four coloured plates are to be given in each number, and the text is intended to deal with gardening in all its branches. The first plate is devoted to the illustration of some hybrid Irises raised between species of the Oncocyclus and of the Regelia types. The hybrids, unlike the members of the Oncocyclus section, prove easy to cultivate and flower readily. The second plate shows Impatiens Oliveri alluded to in our columns September 5, 1903, p. 178. Rose Frau Karl Druschki finds a place as the best double white H.P. in cultivation. Diervilla (or Weigela) Eva Rathke also figured is one of the darkest coloured forms of D. florida. In addition to notices on newly introduced plants, the "Album" contains many useful cultural suggestions. We wish our new contemporary a successful career.

A Gardener's Two Sons Elected to Parliament in One Week.—It may be of interest to our readers to know that Alderman J. H. Bethell, J.P., land agent and auctioneer, who has been returned to Parliament with such a large majority of votes in the Romford division of Essex, and Mr. T. R. Bethell, barrister, the newly-elected member for the Maldon division of the same county, are sons of Mr. G. Bethell, of South Woodford, who was some years ago gardener to Sir Greville Smythe, Bart., Ashton Court, near Bristol. Another son is Mr. Geo. H. Bethell, proprietor of the Hayes Nurseries, Hayes, Middlesex, who formerly was manager of Mr. George Whiteley's Nurseries, Hillingdon, near Uxbridge. This is probably the first occasion on which a gardener's two sons have been returned to Parliament in so short a time, or even at all.

Nos arbres.—Under this title M. Correvon proposes to publish a book on trees, intended to interest the general reader and cause him to love trees and their associations. Intending subscribers should communicate with M. Correvon, Chêne-Bourg, Geneva.

Cinchona Barks.—Mr. David Howard, in a paper read before the Pharmaceutical Society recently, described the efforts made to obtain plants and seeds of the valuable Cinchonas by the Indian and Dutch Governments, referring to the admirable work of Sir Clements Markham. Mr. Howard described the cultivation in India and Java, and specially pointed out the extraordinary effect of the careful selection of plants for propagation, which had raised the quinine contained in the best Ledgeriana bark to 10 per cent. from an average from good wild bark of 3 to 4 per cent. In collecting the bark the old practice was to cut down the trees, but nowadays strips of bark are cut off, and in due season the bark is renewed. The author described the process of renewing which is largely adopted in British India and Ceylon, and pointed out the very curious alteration, not only in the amount of alkaloid, but in the proportion of quinine to the other alkaloids in this renewed bark, and contrasted that with the accumulation of alkaloids in the root bark, especially of unhealthy trees.

One & All Gardening.—Mr. Edward Greening again sends forth his little book on One & All Gardening in connection with the Agricultural and Horticultural Association, Long Acre. The editor and his staff endeavour to make it useful as well as interesting, and have succeeded in putting together a good collection of practical articles by trustworthy authorities. There are plenty of illustrations, ornamental and instructive, and the "Novel Facts about Fertilizers" is likely to prove especially attractive, as Mr. James Scott points a useful moral with some striking pictures. 'The Garden of Honour," by the Editor, treats of town gardening and its possibilities.

The Canadian Horticulturist.—This useful publication commences its twenty-ninth volume this year under the editorship of Mr. H. B. Cowan. The chief articles in the January issue deal with Co-operation by Fruit-growers, by Prof. Reynolds; Winter Work for the Amateur Florist, Summer-bedding, and Vegetables. The whole is nicely printed and got up, and brightened by numerous illustrations, so as to form a great improvement on its predecessors.

A New Market for Cider. According to the *Journal of the Board of Agriculture* there is a continually increasing demand for English cider. Australia, South America and South Africa are already good customers, and recently a ready market has been found for cider in Holland. Dutch Apples have not been found suitable for cider-making, and the Dutch Department of Agriculture were last year instrumental in arranging an exhibition of English cider, to be held in Amsterdam. Cider is considered by the Dutch as a wine, and they would pay a remunerative price for the best qualities; those retaining the aroma and flavour of the fruit with some degree of sweetness being preferred to less pure and to acid or bitter varieties of the beverage. Perry was equally appreciated, and English growers and manufacturers of this and of cider are recommended to develop the trade with Holland as soon as possible before Dutch orchards and factories are capable of competing with them.

New Insect Pest of the Douglas Fir.—Dr. Stewart MacDougall contributes to the *Journal of the Board of Agriculture* an account of a new insect pest of Pseudotsuga Douglasi. Mr. John Crozier, of Aberdeen, had sent some affected seeds and insects for examination, stating that the pest was at first of but trifling importance, but soon increased to a serious extent. The insect proved to be Megastigmus spermotrophus, and was hitherto not represented in the Natural History Museum. The eggs are laid in the young cones of the Douglas Fir, which showed no external mark of the presence of the larva. Each seed contains one larva, nourished on the reserves therein stored up. It is supposed that the species was introduced to Britain in seed from the native home of the tree in Western North America. The insects are so small and the cones often so numerous that sweeping and beating the trees is suggested as one means of reducing the numbers of adult Megastigmus. Dr. MacDougall further recommends that the cones should be gathered when ripe, in late October, and the seed extracted and fumigated, thus:—"Place the material to be treated in an air-tight receptacle. Pour bisulphide of carbon in a shallow dish and lay this on the top of the material. Close the receptacle. The bisulphide of carbon vaporises, and as its fumes are heavier than the air they sink down through the material. The receptacle should be kept closed for 48 hours. One ounce of bisulphide of carbon will do for 100 lbs. of seed, or 1 ounce for every 50 cubic feet of air space. The treatment should be administered in not too cold a temperature. Bisulphide of carbon fumes being poisonous should not be inhaled by the operator, nor should a light of any kind be brought near." The operation does not hinder the germinative properties of uninfested seed and is fatal to the larva.

Do Plants Think?—This is the question raised by Mr. Argyll Saxby in a pamphlet concerning the neurology and psychology of plants. Its solution depends, of course, upon the meaning attached to the words "think" and "thought"; whether they may be applied to evidences of nervous sensitiveness or to powers of reasoning unaffected by the environment of the moment. Mr. Saxby apparently attributes both sense and sensibility to plants, as he concludes that "all protoplasmic nature has the possibilities of sensibility and reason, whilst in some of these which we call the lower forms of life these qualities are abundantly evident. Robbed of the soul all sensibility is reduced to chemical reactions, and since both animal and vegetable forms are subject to similar reactions, the denial of sensibility as being possible in either case is manifestly absurd. It is merely a matter of development to make the lower equal to the highest." The author puts forward other theories and as he expects ridicule to attend his idea of spiritual thought permeating and controlling all nature, and therefore shared by all atoms of that nature, we will not further enlarge upon it here. We have still to meet the difficulty of how to recognise the boundaries that divide elaborate reasoning and the highest human faculties from the "chemical reactions" causing such phenomena as (say) heliotropism, or the movements of Mimosa or Drosera leaves. Mr. Saxby's little pamphlet can be procured from the "Guardian" Office, Pool Street, Bodmin.

Doctor Udo Dammer, Curator of the Botanical Museum in Berlin, has been appointed a professor. Dr. Dammer studied practical gardening at Potsdam, and was afterwards employed in the Botanic Garden in St. Petersburg. He has worked in the Botanical Museum of Berlin since the year 1889. Dr. Dammer is well known as the author of various books, notably *Palmenzucht und Palmenpflege* (the Culture and Care of Palms). He was the translator of Dr. Masters' Vegetable Teratology into German, and is an occasional contributor to these columns.

Illustrations of Choice Vegetables.—Mr. Ernest Benary, Seedsman, Erfurt, has issued Part II. of *Vegetables Photographed from Nature*, concerning the first part of which a note was published in our issue for March 18, 1905. The second part contains eight loose plates upon thick art paper, each measuring 20 by 18 inches, and representing selected varieties of the following vegetables:—Carrots (two plates), Summer Radishes, Cabbage Lettuces, Cabbages, Lettuces for forcing, Radishes, Kohl Rabi, and Corn Salads. The 16 varieties of Carrots represent all types from the short, thick rooted to that in which the roots are very much longer and of tapering shape throughout. One of the short-rooted varieties named Paris Market appears almost similar to a Turnip, so short is the swollen root. The varieties of Radish recommended for forcing, which are given a plate to themselves, appear excellent for the purpose, and the illustrations are capital. We do not think the Summer Radishes are represented in such good condition. They are described as of natural size, but the roots are shown to be so large that nine out of ten persons would fail to identify them as Radishes at all. In any case, no cultivator would allow them to grow to such a size if they were intended for consumption. The Lettuces and Kohl Rabi make three very good plates, and on the remaining plate attention is drawn to seven varieties of Corn Salad (Valeriana), an excellent salad that is used freely on the Continent, but very little in this country. We may add that this is an English edition of the work, and copies may be had for six shillings each. One part is to be issued every year.

The Journal of the Royal Horticultural Society.—The December part is so voluminous that it will be impracticable to review its contents in any reasonable time. We must confine ourselves to saying that it is as usual a most valuable publication, from which we may, in future, make extracts. At present it is barely possible even to enumerate its contents, so numerous and substantial are they. The Secretary, in laying down his editorial functions, points out that on his accession to office in 1888 there were only 773 subscribing Fellows, of whom 221 immediately resigned, so that he was confronted with a debt of £1,152; an annual expenditure of £3,500, a subscription income little, if at all, more than £1,500 a year, and the publication of the Society's journal was suspended. The debt was paid off in 1888 and 1889, and there has since been an annual average increase in the Society's income of £753. In 1888 the Society was homeless and houseless. It now has a magnificient hall of its own, thanks to Baron Schröder and others, with convenient and suitable offices. The number of Fellows is now nearly 10,000. The gardens no longer consist of about 13 acres in the smoke-begrimed district of Chiswick, but exceed, thanks to Sir Thomas Hanbury, 60 acres in the beautiful open country and clear air and sky of Wisley, near Weybridge. In 1889 the *Journal* was recommenced and numbered 404 pages. It has now more than 1,200 pages, with 234 illustrations and six coloured plates. In 1888 there was a debt of £1,152; there is now a reserve fund of £16,536. Mr. Wilks may well cry, *Nunc dimittis*. There may have been delay, but there has been no "break down" in the publication of the *Journal*. The only serious complaint we have heard concerning it is that it is too good, or at least too voluminous. The new editor, Mr. G. S. Saunders, will, no doubt, use his pruning knife, and eliminate matters which are not strictly horticultural. The contents of the present part comprise the papers read before the Society, and even those which have formed the subjects of discussion at the Horticultural Club and the Chelmsford Gardeners' Association. The notes and abstracts constitute a valuable feature, occupying some 200 pages. A little more eclecticism in this department would be advantageous. Two indexes complete what is truly a *magnum opus*.

M. Ernest Fierens.—We regret to hear of the death, from pneumonia, of M. Ernest Fierens, of Ghent. M. Fierens was well known as a Chrysanthemum grower, and also for his services in connection with the Société Royale d'Agriculture et de Botanique, of which he was the courteous and most efficient Secretary. By those who are in the habit of visiting the Ghent Quinquennial Exhibitions he will be greatly missed. It is but a short time since we had to record the death of M. de Meulenare, and now the Society is again plunged in sorrow. In communicating the intelligence our correspondent appropriately made the quotation, "Uno avulso, non deficit alter." Such is the vitality of the old Society and its managers that we doubt not this optimism will be justified.

Ether-Forced Rhubarb.—Mr. W. Stuart, of the Vermont Experiment Station, has communicated to the Department of Agriculture (U.S.A.) the results of his experiments in forcing Rhubarb by the aid of ether fumes. In his trials the roots to be treated were dug in autumn and allowed to freeze. In December they were gradually thawed in a cool cellar, and then part of the roots were subjected to ether fumes and part left untreated for comparison. The roots were etherised for 48 hours in an air-tight box, using 10 cubic centimetres of ether per cubic foot of space. Three other sets of roots were etherised at later dates and with varying proportions of ether. The earliest of the treatments proved the most successful as regards the total yield. The plants etherised were of earlier and more vigorous growth, and yielded increased weight of product when compared with the specimens left untreated.

An Association of Horticultural Instructors.—A movement initiated by Mr. A. E. Brooke-Hunt, Inspector under the Board of Agriculture and Fisheries, has resulted in the various lecturers on Horticulture in the United Kingdom forming themselves into an association. The members propose to have periodical meetings, when papers will be read and discussions conducted on the different phases of educational work in gardening. Mr. A. E. Brooke-Hunt was elected chairman at a recent meeting, and Mr. Walter P. Wright, of Postling, Hythe, Kent, Hon. Secretary and Treasurer.

Linnean Society.—General meeting, January 18, 1906, Prof. W. A. Herdman, F.R.S., President, in the chair. Mr. William Carruthers, F.R.S., a past-President of the Society, on the part of the subscribers, presented a portrait of Prof. S. H. Vines, D.Sc., F.R.S., President from 1900 to 1904, painted by the Hon. John Collier, and the President in the chair accepted the gift on behalf of the Society. Mr. T. Ernest Waltham exhibited a series of coloured transparencies from flowers in natural colours, partly by the three-colour process, partly by hand. They were shown on frames specially devised, the light being reflected from beneath, and a frame with stereoscope slid along above the series. One admirable lantern-slide was displayed upon the screen, to show the success of the process. Mr. A. O. Walker and Dr. A. B. Rendle contributed some remarks. The first paper was by Mr. A. W. Allen, on "The Life-history of Margaritifera Panasesæ," which was communicated and read by the Rev. T. R. F. Stebbing, Sec L.S. Mr. A. D. Cotton, F.L.S., then gave the main features of his paper "On some Endophytic Algæ," illustrating his exposition by drawings on the blackboard. A paper by Dr. A. Broom, communicated by Prof. A. Dendy, F.L.S., was read in title, "On the Organ of Jacobson in Sphenodon," and was illustrated by coloured drawings. A meeting will be held on Thursday, February 1, at 8 p.m. when Mr. J. Stanley Gardiner, M.A., Fellow and Tutor of Gonville and Caius College, Cambridge, will give an account of the Percy Sladen Trust Expedition to the Indian Ocean, of which he was leader, in H.M.S. "Sealark."

British Botanists in Pretoria. — The October issue of the *Transvaal Agricultural Journal* contains a description of the visit paid by some of the botanists attached to the British Association to the "Wonderboom," *Ficus* sp. This is a wonderful tree, hemispherical and covered with evergreen leaves and small figs. Its diameter is 162½ feet and its height about 67 feet. "Some of the branches from the centre spread out laterally in a radial direction and gradually droop towards the ground. At a distance of about 30 feet they come in contact with it and send out roots from which new groups of stems arise. From these other branches may be given off, still in the same radial direction, and these, coming in contact with the ground, may become rooted in their turn and send up a third group of stems. . . . The district round the Wonderboom was especially interesting to the botanists present as being the old hunting ground of Charles Zeyher, who obtained many of his type specimens here about 1842."

Forestry in New South Wales.—In a lecture on Forestry given last autumn by Mr. J. H. Maiden, Director of the Sydney Botanic Gardens, we find many valuable hints concerning Forestry and timber. Mr. Maiden lays special stress on the necessity for the forester being also a good botanist and having a knowledge of the life-history of his trees; their habits, bark, timber, leaves, flowers, and fruits. The Australian student has not the book-lore of centuries to aid him, but has principally to deal with trees of the difficult and still partly unknown genus Eucalyptus, of which new species are yearly discovered. Only by careful and systematic examination of the trees and of the timber imported can the forester attain to a knowledge of the special properties and possibilities of the several species, and learn to recognise them apart.

South Eastern Agricultural College, Wye.—We are informed that a meeting of the Govenors of this College was held at the Westminster Palace Hotel, on January 22, Lord Ashdown, chairman, presiding. The Principal, Mr. M. J. R. Dunstan, reported 97 students to be in residence for the Spring Term; the appointment of Mr. Plymen, the soil analyst, to the Professorship of Agricultural Chemistry at Nagpor; and details connected with the new buildings, the electric light installation, and water supply. Mr. E. Salmon has been appointed Mycologist, and Mr. A. Amos Assistant Chemist. The establishment of a Horticultural side to the College is under consideration.

The Surveyors' Institution.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, January 29, 1906, at 8 p.m., when a paper by Mr. F. Marshall, K. C. (Associate), entitled "The Valuation of Machinery for the Purposes of Rating," will be read. The annual dinner of the Institution will be held at the Whitehall Rooms, Hotel Metropole, on Wednesday, February 21, 1906, at seven o'clock precisely.

The Dinner to Mr. W. Marshall.—It has been decided that the dinner already mentioned shall take place on March 6, at 6 p.m., at the Hotel Windsor, Westminster. Tickets for the dinner will be 6s. (exclusive of wine). Although the dinner is promoted by the Floral Committee, past and present members of all the Royal Horticultural Society Committees and other horticultural friends of Mr. Marshall are cordially invited. Application may be made to Mr. George Gordon, Endsleigh, Priory Park, Kew, or to members of the sub-committee mentioned in our previous note.

Rainfall in 1905.—Our correspondent, Mr. Ernest Willoughby, sends us the following remarkable details of the rainfall at Glencarron, Ross-shire. Glencarron is situated inland with high hills surrounding it. The total number of inches recorded was 95·13, the wettest month being January with 13·39 inches. Rain fell on 280 days, October only escaping with one dry day. Mr. W. H. Jenkins, Wythenshawe Gardens, Northenden, Cheshire, sends the record of the past year's rainfall in those gardens as 27·61 inches, which is 2 inches below the average. No measurable rain was registered for a period of 14 days during May, thus causing a drought in the locality. The highest shade temperature was 89° on July 8, the lowest mean temperature 12° on November 19.

Publications Received.—*The Collector's Magazine*, January 13.—*Proceedings of the Agri-Horticultural Society of Madras;* July to December 1905.—*Bulletin of the Department of Agriculture, Jamaica!* December, 1905. Edited by William Fawcett, Director of Public Gardens and Plantations. The contents relate chiefly to Rubber and Cocoa.—*The Queensland Agricultural Journal*, December, 1905. This contains the usual notes on agricultural and horticultural subjects, and is edited by Mr. A. J. Boyd.—New York Agricultural Experiment Station: Bulletin No. 269.—*Winter Injury to Fruit Trees.* By H. J. Eustace.

A NEW VARIETY OF ORANGE.

The illustration at fig. 29 shows the pretty little variety of Citrus japonica, shown recently by Messrs. Veitch and Sons, of Chelsea. It is evidently a close ally of the Kum Quat, a variety much esteemed for decorative purposes as also for its candied fruits. For greenhouse decoration these plants are very desirable, as they flower and fruit while still in small-size pots, whilst, as we have said, they are valuable for other purposes. The present variety is remarkable both for its narrow foliage and its elliptical fruits. It will be remembered that a note was printed on p. 46 of the last issue relating that the Fruit Committee of the Royal Horticultural Society had awarded a First Class Certificate to this variety on the ground that the fruits are of excellent quality for dessert. It will be seen, therefore, that this orange is a useful acquisition.

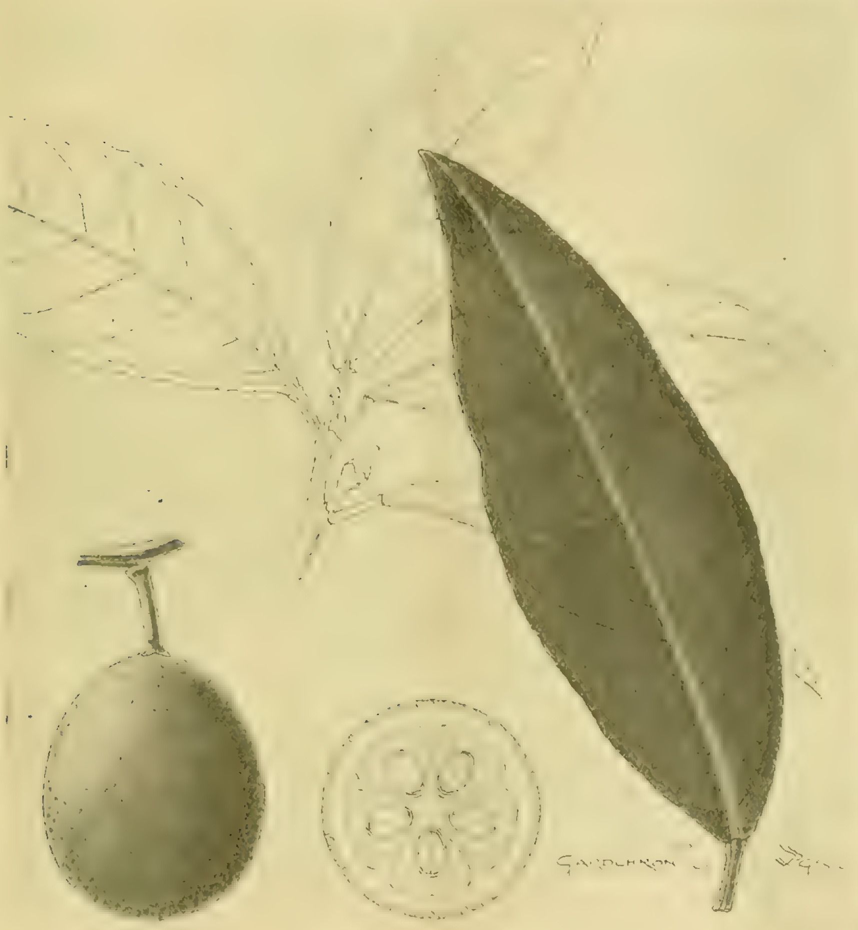


Fig. 29.—citrus japonica with elliptic fruit.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

Annual Meeting.

January 18.—The sixty-seventh annual general meeting of the members and subscribers of this institution was held on the foregoing date at Simpson's Restaurant, 101, Strand, London. The chair was occupied by Mr. Harry J. Veitch (treasurer). The secretary read the report and balance sheet for the past year, from which we give the following extracts:—

"At the beginning of the year there were on the funds 214 persons—127 men and 87 widows —receiving £20 and £16 per annum respectively for life, at an annual cost of £3,792, being an increase of seven persons as compared with the previous year. During 1905 eighteen pensioners died, four leaving widows, who, their cases being found eligible and deserving, were placed on the funds for the widow's pension without election, in accordance with Rule III., 13.

"Thus at the close of the year there were 200 persons receiving annuities for life, and, feeling assured of continued and, as they hope, increased support, the committee recommend the election this day of eighteen persons from the approved list of forty-four candidates. This will make a total of 218 annuitants on the funds—the largest number at any time in the history of the charity.

"Notwithstanding this, unfortunately there will be twenty-six unsuccesful applicants, who must anxiously await a further election a year hence before receiving the permanent aid they so much need. The committee wish the annual income enabled them to assist a larger number, but in adding four additional beneficiaries they feel they have done all that the state of the funds warranted. The special funds at the disposal of the committee are of the greatest benefit. The income from the 'Victorian Era Fund' has been applied in affording assistance to the unsuccessful candidates at the last election, who were formerly subscribers, £157 having been distributed among them during the year; while the income from the 'Good Samaritan Fund' has enabled the committee to make grants of nearly £100, as temporary help in cases of most urgent distress and need."

The balance sheet showed a total income of £9,263 18s. 4d., which includes a balance from last year of £1,048 10s. 4d. The annual subscriptions amounted to £1,638 17s., while the donations at and in consequence of the festival dinner, including sums raised by means of the collection cards, totalled £2,225 9s. The magnificent sum of £4,849 18s. was derived from the interest on the invested funds, truly a magnificent backbone to the institution. The expenditure on pensions and gratuities was £3,741 12s. 6d., and the committee has been enabled to place on deposit £3,665 10s.

The Victorian Era Fund had an income from all sources of £345 1s., out of which amount £157 has been expended in the form of gratuities.

The receipts to the Good Samaritan Fund totalled £302 3s., and from this amount necessitous cases had been relieved to the extent of £85, leaving a balance of £217 3s.

The Victorian Era and Good Samaritan Funds were both doing excellent work, and as an example of the usefulness of the latter fund, the relief of the daughter of a prominent gardener, a man who, before his decease, was widely known and respected by many present in the room, was cited.

The chairman referred to the management of the Society, and congratulated the subscribers upon the economical manner in which the funds of the institution, with a yearly turnover of nearly £10,000, were managed.

The adoption of the report was carried unanimously.

The officers of the institution were all re-elected, as were also the retiring members of the committee, with the exception of Mr. M. Gleeson, who desired to resign. The vacant place was filled by Mr. Ed. White.

The Successful Candidates.

The scrutineers having handed in their compilations of the votes recorded, the result was announced as follows:—1, Juliet Fitt, 3,307 votes; 2, Elizabeth Williams, 3,244; 3, Charles Rutson, 2,891; 4, Stephen Goddard, 2,734; 5, Isabella M. Clarke, 2,730; 6, Mary Ricks, 2,655; 7, George B. Scott, 2,655; 8, William Egglestone, 2,621; 9, Elizabeth Stubbs, 2,612; 10, William Wickens, 2,599; 11, Bethiah Ward, 2,543; 12, William Moore, 2,507; 13, James Stone, 2,444; 14, Mary Down, 2,363; 15, Richard Salway, 2,334; 16, Isaac Clement, 2,243; 17, Sarah A. Fenn, 2,236; 18, William Smith, 2,226; 19, Joseph Woods; 20, Thomas Smith. The two candidates last named were added subsequent to the original election.

The committee recommended Mr. Joseph Woods, a candidate who has for the past six years been endeavouring to obtain relief, as an additional beneficiary. This was carried unanimously, and it was further agreed by the subscribers present to add a 20th name to the list. The fortunate candidate was Mr. Thomas Smith, who had the next highest number of votes on the polling sheet. It was announced that no fewer than 52 voting papers had been rendered void by the omission of the subscriber's signature on the voting paper.

The Annual Friendly Supper

took place at 6 p.m., also at "Simpson's," and was attended by members of the Committee and their friends. Mr. Geo. Monro, V.M.H., presided. In the course of a speech delivered when proposing the toast of the evening, the Chairman said they were very pleased to be back again at "Simpson's." He related a number of interesting facts connected with the Institution and the disbursement of its funds, some of which were referred to at the afternoon meeting. But, in addition, Mr. Monro had a pleasing piece of news to announce, which came quite as a surprise. This was a message from Mr. N. N. Sherwood, who had asked his son, Mr. Edward Sherwood, to announce to those present at the dinner that he would be pleased to give a sum of £50 for division amongst the candidates who had been unsuccessful at the election. This intimation was received with much gratification, and a message of thanks was sent to Mr. Sherwood. In connection with the election that day, Mr. Monro drew attention to the circumstance that there were 52 unsigned voting papers received, which, therefore, could not be used. Some voting papers were also received after the declaration of the poll, and the Committee being anxious that all subscribers to the Institution should have a voice in the election of candidates, could not but regret that more care is not exercised in respect to this matter.

Mr. Harry J. Veitch, in responding, mentioned the fact that he had been treasurer for about 20 years, and though he would take no credit to himself for the amount of good work that had been accomplished in that period, he could not but rejoice that, whereas then there was £21,000 invested, there is now £42,000. Instead of there being 118 pensioners on the funds, there are now 220 pensioners. In addition, both those excellent funds, the Victorian Era Fund and the Samaritan Fund, had been established. Mr. Veitch coupled with this response the toast of the country members and auxiliaries, to which Mr. H. G. Cox, Hon. Secretary of the Reading Branch, responded. Alderman Piper proposed the toast of "The Chairman," and Mr. Morgan Veitch that of "The Honorary Officers, etc.," the latter toast being responded to by Mr. Owen Thomas.

Mr. George J. Ingram, in replying to the toast of "The Secretary," moved by the Chairman, and referring to the institution of the Victorian Era and Samaritan Funds during the 15 years he has been in office, said that when sending the disagreeable intelligence to such candidates who had been unsuccessful at the poll, he had now the satisfaction of being able to tell them that their cases would be considered by the Committee, and if the circumstances warranted the Committee in making a special grant, they would do so. Before there were such funds, said Mr. Ingram, the communication of this news was a specially disagreeable duty.

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from page 28.)

A STRETCH OF THE TUNG VALLEY.

Szechuan the name given to the largest, most western, and probably richest province of China, simply means "Four streams." The name is derived from the four large rivers, Kialing, T'o, Min, and Yalung, which flow through the province from north to south to join the mighty Yangtsze. These rivers take their rise in wild, sparsely-inhabited country, and for some hundreds of miles follow parallel courses separated by high mountain ridges. Their valleys are very narrow, very much shut in, enjoy a peculiar climate, and support a very curious and interesting flora. The object of this note is to illustrate, by reference to one river valley, the peculiar and altogether anomalous state of things which obtains in these river valleys of Western China.

The river Tung is, rightly speaking, the main branch of the Min river; it unites with the branch which rises north of Sungpan, at Kiating Fu. The stretch with which this note deals is some distance removed from the point of union of the two streams. It lies, roughly, in long. 102°, 32'E, between lat. 29°, 47', and lat. 30° 6'N. The stretch is quite a short one, following the windings of the river for not more than 35 English miles. The village of Lêng-che (alt. 4,300 feet) marks the southern point, and the hamlet of Wa-su-kou (4,600 feet), the northern point of the stretch.

The river between these points flows along the line where limestone gives way to granite, and is shut in by steep mountains on either side. Those on the right bank tower fully 10,000 feet, being spurs of the mighty snow-clad peaks of the Chino-Tibetan frontier. Shrubs and remnants of Conifer forests clothe the upper part of these mountains. The mountains on the left bank are not so high, and are clad with long grass, a few herbs, and stunted bushes. Numerous streams join the river from the right bank, but scarcely one from the mountains of the left bank. From Lêng-che to Luting-chiao (10 miles) the road skirts the left bank of the river, crossing to the right bank at the latter village by means of a fine iron suspension bridge, 107 yards long. From this bridge to Wa-su-kou, the road is for the most part hewn out of solid rock, and is one succession of steep ascents and descents. In many places it projects over the river, being supported on poles driven horizontally into holes blasted in the rocks. This road is seldom more than 4 feet wide, and is not only difficult, but highly dangerous to travel over.

This river-valley between the points mentioned above enjoys a much warmer climate than one would expect from its altitude, and in this is only a type of most of the river-valleys in these regions. Captain Gill ("River of Golden Sand," Vol. ii., p. 135), notes the presence of green parrots in the valleys of the Yalung and Kinsha rivers, in much the same latitude but farther west, and between 7,500 and 9,000 feet altitude. In a footnote on the same page we read: "Lieut. Garnier notices the warm temperature in the valley of the Kinsha at its confluence with the Yalung. The characteristic plants of Kiang-Hung on the Mekong, 4° south, were found there."

When passing through this portion of the Tung valley, I was struck with the peculiarity of its flora, but subsequently I found this peculiarity general to the river valleys of the west. The majority of the characteristic plants were the same as those of parts of Yunnan, 7° south. The flora is excessively poor, essentially xerophytic, and warm-temperate or sub-tropical in character. The herbs have fleshy leaves, bulbous, rhizomatous, or variously thickened rootstocks; the shrubs are dwarf, spinescent, with small leaves, or with leaves and stems covered with woolly hairs. The trees are such as are found to succeed best in dry regions.

By far the most striking and, possibly, commonest, plant is Opuntia Dillenii. This colonist is as much at home here as it is in parts of Texas and Arizona. Miles and miles of the river banks are covered with this plant, which forms large bushes 8 to 10 feet high, often one mass of pale-orange flowers. So much does the presence of this plant alter the appearance of the country that one could easily imagine it to form part of one of the arid states of Southern U.S.A. And as if to make the delusion complete, a Mimosa-like Leguminous plant is associated with the Opuntia exactly as one finds it in the above States! In parts of Yunnan, and more especially the low mountains around Lake Shi-ping, large areas are covered with this self-same Opuntia to the exclusion of nearly everything else. The fruits are eaten by the peasants, who thus help to propagate the plant. The extract from the stems on boiling them is considered a cure for hæmorrhoids.

The characteristic shrubs and sub-shrubs of this dry region are: Buddleia paniculata, Vitex Negundo, V. incisa, Sophora viciifolia (a very spiny form), Caryopteris Mastacanthus, Caryopteris sp., Ceratostigma minus, Bauhinia sp., Albizzia Julibrissin, Acalypha sp., Incarvillea variabilis var. latifolia, Amphicome Emodi, Indigofera decora, and Buddleia variabilis. Others much less common are Myrsine africana, Rosa Webbiana, Ligustrum Prattii, Jasminum floridum, Cotoneaster pannosa, C. Franchetii, Leycesteria formosa, Kölreuteria bipinnata (shrubby form). Xanthoxylum Bungei (cult.), Xanthoxylum sp., Sophora sp., Indigofera spp., and various sub-shrubby Labiates and Composites. Clematis Gouriana, two species of Ceropegia, two species of Ipomæa, and several species of Cynanchum are the common climbers.

In point of numbers Lilium leucanthum is the commonest herb. In the niches of the rocks and amongst scrub and long grass, it occurs in hundreds of thousands. In July and early August, when this Lily is in flower, the hillsides are dotted all over with its large, white, funnel-shaped flowers, and their fragrance fills the air. These Lily-flowers are eaten by the peasants, the perianth being broken up into its six segments, and the style, ovary, and anthers are discarded. The segments and stamen-filaments are then boiled, strained, and then dried in the sun, and preserved. They are eaten fried with salt and oil. The bulbs of this species are not eaten, but those of L. tigrinum and L. sutchuenense are consumed in various parts of China.

Datura Stramonium and Verbascum Thapsus are two common roadside weeds. The Chinese are well aware of the poisonous nature of the Datura, and the Verbascum is undoubtedly spontaneous. Another characteristic herb is Chelidonium Franchetianum. This is really a very pretty plant, with marbled leaves, and clear yellow, but very fugacious flowers.

Other common herbs hereabouts are, Barleria cristata, Platycodon grandiflorum, Oxalis corniculata, Taraxacum officinale, Ophiopogon spicatus, Thalictrum dipterocarpum, Hemerocallis fulva, Lythrum Salicaria, Polygonum spp., Pteris sp., Statice Bretschneideri, Sedum spp., Lepidium ruderale, Cheilanthes sp., Malva sp., Artemisia spp., Roscoea sp. (flowers pale yellow), Asphodelus sp., Zygophyllum sp., Selaginella spp., Boea sp., and various Compositiæ, Labiateæ, and grasses. The bare rocks fully exposed to the sun are frequently carpeted with Boea hygrometrica and Selaginella involvens. Amongst the grass, Lilium Bakerianum and L. sutchuenense occur sparingly. On bare cliffs Codonopsis convolvulacea, with its lovely blue flowers, and, on shady banks, Scolopendrium Delavayi are occasionally met with.

When in flower the herbs and shrubs of this dry region make a fine display by reason of their intense colours. Purple, blue, and red are the predominating hues, yellow and white being much less in evidence.

Trees are very scarce, being chiefly found around habitations, but although the number of individual trees is not great, the variety is considerable. The following are the chief: Erythrina indica, Thuya (Biota) orientalis, Trachycarpus excelsa, Salix babylonica, Populus euphratica, Alnus nepalensis, Sapindus Mukorossi, Gleditschia sinensis, Sterculia platanifolia, Pistacia Weinmanniifolia, P. chinensis, Cupressus funebris, Aleurites cordata, Pterocarya stenoptera, Diospyros Lotus, D. Kaki, Juglans regia, and Ailantus glandulosa. This latter tree is always spinescent in the dry valleys of the west. (This is probably the same as A. Vilmoriniana, see *Gardeners' Chronicle*, Vol. xxxviii. (1905), p. 276.)

Phyllostachys mitis is the common Bamboo around dwellings. The Walnut is the commonest fruit-tree, though Pears, Apples, Peaches, and Apricots are commonly grown. Rice is the common crop in the bottom-lands; Maize on the mountain sides up to 7,500 feet; Millet and Sorghum are the other cereals. The nature of the country does not lend itself to agriculture, and the population is very sparse. *E. H. Wilson.*

(To be continued.)

NOTICES OF BOOKS.

The Horticultural Note Book. By J. C. Newsham, etc. (Crosby, Lockwood and Son.)

The sub-title of this book well indicates the nature of its contents as "a manual of practical rules, data, and tables for the use of Students, Gardeners, Nurserymen, and others interested in Flower, Fruit, and Vegetable Culture, or in the laying out and management of gardens." So far as we remember, we have had nothing so complete of its kind as this little manual. It reminds us of Professor Bailey's *Horticulturists' Rule Book*, and in so saying we are paying a compliment to the author of the present compilation. The chapters on weights and measures are, of course, indispensable, although they bring prominently into notice the utterly unsystematic and confusing nature of our present practice. Fortunately, the compiler has added the necessary information relating to the metric system, and the next generation will probably wonder how their fathers could have tolerated for so long such a medley of inconsequent details as now encumber our table-books. Garden-formation, horticultural structures, hedges, fences, gates, soils, manures, the propagation of plants, hints on the culture of flowers, fruits, trees, shrubs, and vegetables all find a place in this little book, together with notes on insecticides and fungicides, and the weather as it affects gardeners. In this latter connection we may say that we find no mention of the newly-introduced "Pagoscope," which we have found useful. It is impossible to deal critically with such a mass of facts as are here got together; but we may record our impression that the note-book will be found most useful for consultation, and that gardeners will be amply repaid for the outlay they may incur in purchasing it. The price may seem at first sight high (7s. 6d.), but its possession will obviate the necessity for purchasing many books. In the geometrical definitions we are told "that an obtuse angle is greater than a right angle," which makes us think that the definition of a right angle should first have been given. As it is, we find no definition of a right angle at all! The results of the voting on Potatos and Apples throughout every county in the British Islands given in our columns might well have been inserted, but where so much is given it is ungracious to ask for more. We may add that, so far as we have seen, the proofs have been carefully read, and misprints are surprisingly few. The names of plants on p. 299 constitute a rare exception. There are numerous illustrations and a good index.

NICOTIANA SANDERÆ AT KEW.

AMONG the best flowering plants in the open garden at Kew last season were Messrs. Sander & Sons' hybrid Nicotianas. The plants were raised from seeds sown in cool frames, and afterwards cultivated in pots, from which they were transplanted to the beds at the end of May. The Curator, Mr. W. Watson, who is one of the keenest of plantsmen, informs us that they grew well, branched very freely, and flowered profusely until autumn. So much has been written in these columns as to the merits of Nicotiana Sanderæ, and its varied colours and suitability for bedding, that we need say but little at this time. Our readers, however, will agree that the illustration at Fig. 30, which has been prepared from a photograph taken by Mr. Wallis, shows unmistakably that the effect of such a bed as that portrayed must be brilliant and graceful. One of the most gorgeous sights we remember to have seen was a collection of these Nicotianas in the nurseries of Messrs. Sander & Sons, at Bruges, a year or two ago, where they filled house after house with sheets of rich colours.

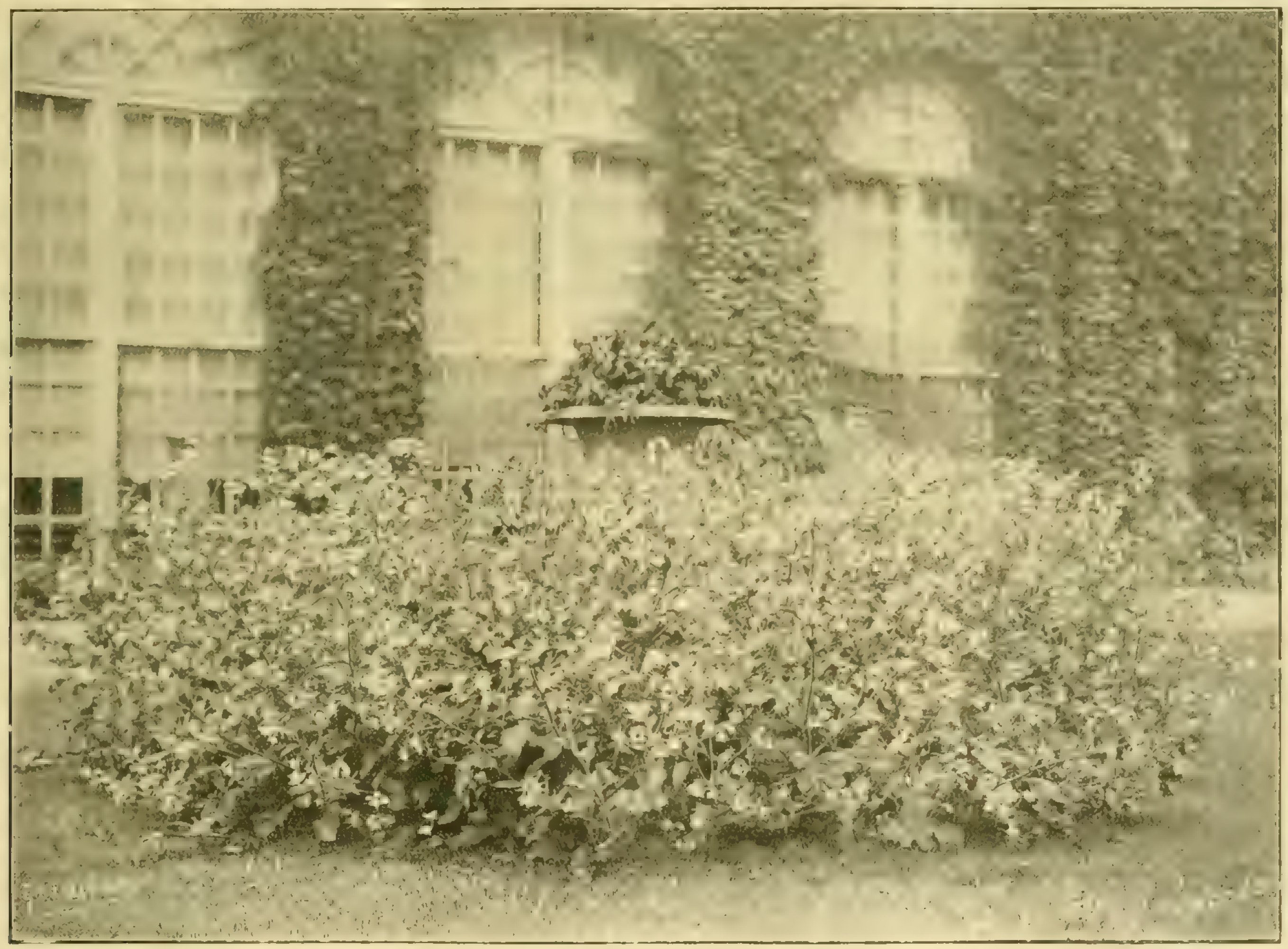


FIG. 30.—BED OF NICOTIANA SANDERÆ, AS IT FLOWERED LAST SEASON IN THE ROYAL GARDENS, KEW.
(From a photograph by Mr. Wallis.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

ANTHRACITE COAL.—Mr. A. Holland Hibbert, p. 46, enquires whether other readers of the *Gardeners' Chronicle* have been asked to buy trucks of anthracite which had "broken down a few miles from their station." I have been asked to do so many times during the past two years, and I have long been expecting some one to call the attention of your readers to the phenomenal bad luck which appears to attend the efforts of certain vendors of anthracite coal. At first I was offered coal which had "arrived too late for the vendor's customers," and after this had gone on for some time, trucks began to break down a few miles away from our station with great regularity. I fear I shall never have the courage to give an order to such an unfortunate firm, as, should the truck by a great stroke of fortune avoid a breakdown at that fatal spot, "a few miles away," it would probably, in accordance with precedent, arrive too late. I have not asked the price of any of this stranded coal, but I am not at all surprised to learn that the full market value is demanded. *C. R. Fielder.* [We have received several other letters to the same effect, and one of the original letters from a Colliery Company.—ED.]

APPLE FRENCH CRAB.—I am sending you some Apples of the variety French Crab, which are still attached to the wood. The branch has been cut from the tree to-day, and there are many such branches. They have been subjected to from 10° to 18° of frost many times over, and this morning there was 12° of frost. Wind seems to have no effect on these fruits, as there have been many heavy gales since September last. Most of the fruits are quite sound, while some show frostbites. The crop of 1904 was not gathered until December, and the fruits were used in June, 1905, when they were still fresh and good. *Fredk. Bedford, Straffan House Gardens, Co. Kildare. Jan. 22.* [The fruits are exactly as described by our correspondent. Those which are perfectly sound, however, have commenced to become a little "mealy," or dry. —ED.]

CANKER AND FROST-RESISTING APPLES.—Two questions of great importance to fruit growers were raised in the *Gardeners' Chronicle* of January 6. One is the canker-resisting constitution of certain varieties of Apples, alluded to by Mr. A. B. Wadds; and the other the frost-resisting capabilities of some kinds of the same fruit, mentioned by Mr. R. L. Castle. If readers would compare notes in your columns as to the varieties of the Apple most and least liable to canker and to damage by frost respectively, much valuable information might be obtained. In my own experience I have found King of the Pippins, Ribston Pippin, and Cellini Pippin more liable to canker than any other of over 30 varieties that I grow in my plantations and private orchard. Potts's Seedling also has been attacked somewhat badly, though not as extensively as the varieties named above. My experience with certain of the varieties named by Mr. Wadds as comparatively free from canker coincides with his, while others in his list I do not grow. Irish Peach, Beauty of Bath, Lady Sudeley, Worcester Pearmain, and Lord Grosvenor have suffered but little from canker, and Cox's Orange Pippin less than many varieties. I have only a few trees of The Queen; but they are fairly healthy. Bismarck does not thrive on my light land; but I have not noticed much canker in the trees. My trees were planted six years ago, and they had not suffered much from canker until after the wet season of 1903. The soil in my oldest plantation is of a lightish loam over the Tunbridge Wells sand, which dries very quickly after rain. I thought when I planted the trees that canker would not be troublesome on such land; but the texture of the soil is extremely fine, and it holds water like a sponge while the weather remains rainy. In relation to the frost-resisting question, I have not made any observations. *An East Sussex Grower.*

The Willow for Cricket Bats.—The best Willow for the purpose is Salix Russelliana, and it also commands the best price, from 5s. to 12s. 6d. per cubic foot. I saw a lot sold last season at 10s. 6d. per cubic foot. A good set costs from 1s. to 1s. 6d., and, if planted in suitable position and does well, is worth from £5 to £8 in 15 years. I planted 500 sets here last season that were cut from the tops of some trees; the owner of same bought the piece of ground 16 years ago, paid £50 for it, planted it with the above variety of Willow, and sold them last season as they stood for £2,000. *Jno. Barker, Pishiobury, Sawbridgeworth, Herts.*

SOCIETIES.

ROYAL HORTICULTURAL.

January 23.—The weather on Tuesday last was so cold, and in London, at least, so foggy, that it was surprising that exhibitors had the temerity to make such a good display of Orchids and other plants at the Royal Horticultural Society's meeting in the Hall in Vincent Square, Westminster.

As will be seen from the report printed below, the show of Orchids was unusually good, though the awards made to novelties—three Awards of Merit—were fewer and less important than usual. It has also to be remarked that no exhibit was made in the special competition for Oncidiums which had been arranged for that day.

The Floral Committee recommended one First Class Certificate to Buddleia asiatica, an old species that is not often seen in gardens. No other award was recommended to an individual plant.

The Fruit and Vegetable Committee made no awards other than a Medal and two cultural commendations.

At the afternoon meeting Mr. Martin H. F. Sutton read a paper on "The Formation and Care of Lawns and Golf Greens." A number of new Fellows were elected.

Floral Committee.

Present: W. Marshall, Esq., chairman, and C. T. Druery, H. B. May, Geo. Nicholson, Chas. Blick, Chas. Jeffries, Chas. Dixon, H. J. Jones, Chas. E. Pearson, Chas. E. Shea, W. P. Thomson, J. F. McLeod, J. Green, H. J. Cutbush, G. Reuthe, E. T. Cook, R. W. Wallace, E. H. Jenkins, G. W. Barr, George Paul, and R. Hooper Pearson.

Freesia Chapmanni is a name given to varieties of Freesia raised from a cross between F. refracta alba and F. aurea, by F. Herbert Chapman, Esq., Guldeford Lodge, Rye. The inflorescences as shown were much branched, and the flowers, though smaller in size than those of F. refracta alba, were prettily stained on the lower segments with bright orange colour.

Mr. J. Hudson, The Gardens, Gunnersbury House Gardens, Acton, exhibited a plant of Haemanthus magnificus in flower.

Messrs. H. Cannell & Sons, Swanley, Kent, staged a collection of Chinese Primulas. The exhibit, which comprised a very large number of plants, was arranged in batches of various colours, including purple, pink, salmon, red, white, &c. The plants were of a healthy, sturdy type, the trusses of flowers being strong, and the "pips" exceedingly fine; especially commendable were the white and the red varieties. A few plants of a white "stellata" strain named Mrs. R. W. Cannell found a place in the group. Messrs. Cannell also showed sprays of the comparatively new Moschosma riparium. (Silver Flora Medal.)

Messrs. W. Bull & Sons, King's Road, Chelsea, showed a small but choice collection of stove and greenhouse foliage plants. Peliosanthes teta was shown in fruit. Nidularia innocenti striatum and Pandanophyllum humile are two excellent subjects for a warm plant house.

Messrs. John Waterer & Son, Bagshot, Surrey, brought a number of ornamental Conifers, including some of variegated and fastigiated form. The rare Pinus flexilis was noticed. (Silver Banksian Medal.)

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, set up a representative collection of Davallias in plants of the high quality usually shown by this well-known Fern specialist. (Silver Gilt Flora Medal.)

Mr. A. F. Dutton, Iver, Bucks, exhibited some excellent Carnations of the popular American or winter-flowering type. We noticed a white "sport" of that sterling variety Enchantress. (Silver Banksian Medal.)

Mr. S. Mortimer, Rowledge, Farnham, Surrey, showed a small collection of Carnations of an exhibition standard of quality.

Messrs. Hugh Low & Co., Enfield, staged a mixed group of flowers and plants. They showed well-grown Carnations in fancy vases, á good batch of Cyclamen, small plants of Lomaria gibba and other ferns, and some neat examples of the beautiful variegated Saxifraga sarmentosa.

Mr. W. Seward, Nurseryman, Hanwell, W., put up a batch of Cyclamen that excited much admiration, for they formed one of the finest displays in the hall. The plants were literally crowded with flowers, and seen from either end of the group they presented a sheet of bloom. The individual plants were sturdy, and of the best type of this seasonable florist's flower. The strain is of exceptional merit. (Silver Gilt Flora Medal.)

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, had a showy group of Coleus thyrsoideus, set-off by a back-ground of tall Palms, and relieved with clumps of Gesnera (Nægelia) exoniensis, Primula × kewensis, Jacobinia coccinea, and Eupatorium vernale, the colours of these various flowers enhancing the beauty of the group. Plants of Buddleia asiatica (see awards) and a specimen of Debregeasia velutina, with numerous small orange-coloured fruits, also found a place in the display. (Silver Banksian Medal.)

Messrs. Wm. Cutbush & Son, Highgate, London, N., showed Alpine and rock-garden plants in a natural manner on a temporised rockery, which gave the exhibit a realistic appearance, this being further intensified by the inclusion of a number of dwarf Conifers, Rhododendron dahuricum, Hamamelis Zuccariniana, Daphne indica, &c., on the higher portions of the exhibit. Irises were shown in plenty, I. histrioides, I. alata, I. stylosa, I. sophemensis, &c., also Christmas Roses, hardy Cyclamen, Primulas, &c. (Silver Banksian Medal.)

Mr. G. Reuthe, Fox Hill Hardy Plant Nursery, Keston, Kent, showed a small number of choice Alpine plants, including many species of Irises, Saxifrages, including the rare S. Frederici Coburgii; Crocuses, Galanthus Ikariæ, &c. (Silver Banksian Medal.)

Messrs. Barr & Sons, King Street, Covent Garden, London, showed Christmas Roses, Lachenalias, Irises, Crocuses, among which were splendid pans of C. suzianus, C. imperati and C. Sieberi, and many other early flowering hardy plants.

Messrs. John Peed & Sons, West Norwood, London, had many pans of Alpine plants, hardy succulents, a batch of Lachenalia pendula, and some well-grown plants of Primula obconica. (Bronze Banksian Medal.)

Messrs. Thos. Ware & Co., Feltham, Middlesex, also exhibited plants of Primula obconica, in addition to hardy plants and Carnations. Many species and varieties of Helleborus were noticed in this display. (Bronze Banksian Medal.)

The Misses Hopkins, Mere, Knutsford, showed coloured Primroses, Christmas Roses, crested forms of hardy Ferns, &c.

Messrs. R. Wallace & Co., Colchester, displayed a large flowering variety of Saxifraga Burseriana labelled S.B. major.

Mr. J. E. Lowe, Shrewley, Hatton, Warwick, displayed some excellent flowers of Chrysanthemum Winter Cheer, a market or decorative variety having bright rosy-pink coloured flowers. (Silver Banksian Medal.)

Award.

Buddleia asiatica. This is a tender species from India, introduced into this country in 1874 (*Bot. Mag.* t. 6323). The plants are said to grow about 3 feet high. They have lanceolate leaves finely serrated, and the flowers, though small in size, are pure white and fragrant, and the racemes are of considerable length. Shown by Messrs. Jas. Veitch and Sons. (First Class Certificate.)

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair, and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, J. W. Potter, W. Boxall, W. H. Young, H. A. Tracy, A. A. McBean, H. T. Pitt, G. F. Moore, Francis Wellesley, Elijah Ashworth, Jeremiah Colman, J. Charlesworth, W. A. Bilney, H. Ballantine, F. W. Ashton, and Harry J, Veitch.

The worse the weather the better the show of Orchids! With frost and fog outside the hall, and a very wintry temperature inside, the stages were nevertheless richly bedecked with Orchids in bloom.

Baron Sir H. Schroeder, The Dell, Egham (gr. Mr. Ballantine), contributed a very fine group for which a Silver Gilt Flora Medal was accorded. In the centre was a very fine display of Lælia anceps, chiefly white varieties, and among which were fine L. anceps Dawsoni, Sanderiana, Stella, Hilliana, Williamsiana, &c. The Cattleyas included C. Trianæ Schroderiana, a handsome white form with rosy-crimson front to the lip; C. T. Russelliana, from the old-time collection of Provost Russell, of Falkirk, and which, like the fine pan of scarlet Sophronitis from the late Mr. Day's collection bearing 40 flowers, tells much for the good cultivation of Baron Schroder's Orchids. Good masses of C. Percivaliana, Lælia acuminata, Odontoglossum Uro-Skinneri album, O. × elegans, Eastwood Park variety; O. crispum, including the neatly spotted variety Lord Selborne; Cypripedium × Lathamianum, with 15 flowers; C. × Leeanum superbum, and other varieties; C. × Maudiæ, C. Mastersianum, Bull's variety, a grand form; Calanthe × Harrisii, Selenipedium × Clonius, Cypripedium insigne varieties, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, were awarded a Silver-Gilt Flora Medal for a fine group in which were about 80 plants of the rich orange-coloured Lælio-Cattleya × Charlesworthii, one of the best of winter Orchids. The labellums were marked with purplish crimson in varying degree. With them were several plants of their handsome Cattleya × Octave Doin; a fine white Odontoglossum crispum, and the nicely spotted O. c. Clarissa, O. × Harryano triumphans Our Queen, a very large yellow flower heavily blotched with chocolate-purple; Lælio-Cattleya × Andromeda, the new L.-C. × Prospero, and other hybrids.

Messrs. J. Cypher & Sons, Cheltenham, secured a Silver-Gilt Flora Medal for a very beautiful and tastefully arranged group, rich in the best white forms of Lælia anceps, and including L. a. vestalis, Stella, Dawsoni, Percivaliana, Hilliana, Sanderiana, &c. Among the Cypripediums were several rare hybrids, viz., C. × Cleopatra, a dark-coloured flower with peculiarly long, bright, rose-tinted dorsal sepal; C. × exul × villosum giganteum, a very fine flower of thick texture, C. × Sunray, C. × aureum virginale, C. × triumphans, a varied selection of good C. insigne, and C. × Leeanum varieties, and others. At one end was a batch of good Cattleya Trianæ, &c.

Messrs. Sander & Sons, St. Albans, were awarded a Silver Flora Medal for an extensive and interesting group containing great variety. In the centre was a splendid plant of Angræcum sesquipedale with four of its large wax-like white flowers; a new form of Cymbidium × Ballianum with purple-tinted flowers, C. Tracyanum, Odontoglossum odoratum, a curious form of O. crispum with yellow and rose-tinted flowers; a very handsome O. × Adrianæ with white ground-colour profusely spotted with purple; Galeandra lacustris, some good Calanthes, a remarkable Vanda cœrulea, with white flowers having the labellums purple, the elegant V. Watsoni, and a very fine selection of Cypripediums, including the distinct varieties of C. insigne, named Jewel, ampliatum, and Erin, all of which bore fine markings on the dorsal sepal, &c.

Messrs. Hugh, Low & Co., Enfield, received a Silver Banksian Medal for a group in which were three plants of Vanda Amesiana, Cypripedium × aureum Surprise, C. × a. Oedippe, a very pretty C. × Hera Euryades, the delicately tinted C. × Venus, C. × Leeanum Clinkaberryanum, C. × calloso-Charlesworthii, C. × Thompsoni, and the beautiful C. × Mrs. William Mostyn, Chardwar variety.

R. Briggs-Bury, Esq., Bank House, Accrington (gr. Mr. Wilkinson), was awarded a Silver Banksian Medal for a select group, including three plants of Cypripedium × Beekmanni, two C. × Maudiæ, C. × Thompsoni, C. × Parkerianum, a fine Odontoglossum × ardentissimum, and the finely blotched O. crispum Mrs. F. Peeters, all splendidly grown and flowered.

M. Chas. Vuylsteke, Loochristi, Ghent, secured a Silver Banksian Medal for a group of very remarkable hybrid Odontoglossums, including a very fine form of O. × Wiganianum, two splendid forms of O. × ardentissimum, O. × Rolfeæ, O. × altum, and some pretty unnamed seedlings, one of them being allied to the finely coloured O. × Vuylstekeæ.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Brasso-Lælia × Mrs. Gratrix, Westfield variety, a large reddish orange flower, broad in all its parts; Cypripedium × Dicksonianum (villosum × Hera Euryades), with rose-purple dorsal sepal with pure white tip; C. × aureum, Westfield variety, with white dorsal sepal with green base; C. × Cecil Dickson (Niobe × Leeanum), and Lælio-Cattleya × Miss Mary Froude, a delicately rose-tinted flower with reddish purple front to the labellum.

Messrs. Stanley & Co., Southgate, staged a small group in which were Cypripedium × Leeanum grandisepalum, a remarkable flower with enlarged lower sepals, one side being white, and other Cypripediums; a clear yellow, finely-spotted Odontoglossum × loochristiense, &c.

Messrs. Heath & Sons, Cheltenham, showed a collection of hybrid Cypripediums.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent Cypripedium × aureum Hyeanum.

R. I. Measures, Esq., Camberwell, showed Zygopetalum × Max-Iorisi, with green flowers marked with brown and white lip; and Cypripedium × Buchanianum magnificum, a reversion towards C. Spicerianum.

Messrs. William Bull & Sons, Chelsea, showed Sophro-Cattleya × Doris, and Dendrobium × Wiganiæ xanthocheilum.

Messrs. Jas. Veitch & Sons, Chelsea, sent Brasso-Cattleya × Orpheus rosea.

Elijah Ashworth, Esq., Harefield Hall (gr. Mr. Holbrook), sent the fine Cattleya Trianæi Harefield Goliath.

Awards of Merit.

Cattleya × *Octave Doin* (Mendeli × Dowiana aurea) from Messrs. Charlesworth and Co. A charming flower, superior in shape to the best C. Mendeli; sepals and petals white, delicately tinted with rose on the margins of the petals; lip ruby crimson with gold lines at the base.

Phaius maculatus from Messrs. Sander and Sons, St. Albans. Inflorescence erect, flowers large, clear yellow with red markings on the lip. A fine form of the species was shown.

Cypripedium × *Bridgei* (Godseffianum × Argus Moensii) from G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page). A very distinct hybrid showing much of the handsome C. hirsutissimum derived through Godseffianum. Dorsal sepal, downy and densely spotted with small blackish spots nearly covering the surface except the white margin. Petals broad rose coloured with a green base bearing black spots.

Fruit and Vegetable Committee.

Present: Mr A. H. Pearson, in the chair, and Messrs. J. Cheal, W. Bates, S. Mortimer, A. Dean, H. Parr, H. J. Wright, G. Kelf, F. Q. Lane, Owen Thomas, J. Willard, C. Foster, H. Somers Rivers, and W. Poupart.

Only two displays were shown in the fruit and vegetable section, one being a collection of Apples and Pears staged by the Dowager Lady Hillingdon, Wildernesse Park, Sevenoaks, Kent (gr. J. Shelton), the other a number of forced crowns of Chicory and Dandelion grown by Mr. C. Foster at University College Gardens, Reading.

The Apples and Pears embraced 42 varieties. A few good dishes of Apples were noticed, notably those of Warner's King, Blenheim Pippin, Striped Beaufin, and Cox's Orange Pippin. (Silver Knightian Medal.)

The two salads shown by Mr. Foster looked tempting. The Dandelion was Sutton's Improved Thick-leaved or cabbaging variety. The seed was sown on July 16, 1905, in shallow drills 1 foot apart the plants being thinned to the same distance in the rows. The crowns were lifted in November and forced under a bench in the absence of light. (Cultural Commendation.)

THE LECTURE.

The afternoon lecture was delivered by Mr. Martin H. F. Sutton. His subject, treated with the ease and lucidity gained by experience, was on "The Formation and Care of Lawns and Golf Greens." The lecture was illustrated by an interesting series of specimens, showing seedlings of the various grasses used either singly or in combination for particular purposes. The preparation of the soil, the drainage, the relative advantages and disadvantages of sowing or of turfing, the species to be employed for particular soils and for different purposes, the method and time of sowing were all discussed, and the lecturer then passed on to the special requirements of croquet lawns, tennis lawns, bowling greens, and putting greens for golf. It was pointed out that while cricket grounds were disused for several months in the year the golf greens are in constant use the whole year. The best method of meeting this difficulty was the formation of duplicate "greens," so that one may be rested and allowed to recuperate whilst the other is in use. The question as to the benefit or otherwise derivable from worms was also touched on, Mr. Sutton's conclusion being summed up against the worms, though he was careful to add that if removed some other means must be taken to increase the amount of nutriment at the disposal of the grasses. The chair was filled by Dr. M. T. Masters, F.R.S., and a few remarks were made by Mr. A. H. Pearson and Mr. Alex. Dean.

Obituary.

James Moore.—There passed away on January 8, after a brief illness, Mr. Jas. Moore, aged 69 years, a good gardener, who for nearly 16 years has been steward and gardener to Lord Langford, at Summerhill House, Co. Meath. Previous to his going to Ireland he had been head gardener at Bray Court, Maidenhead, and the gardens there were laid out under his supervision. When a young man he spent several years in the Royal Horticultural Society's Gardens at Chiswick. Deceased was universally respected in the district. *D. C.*

MARKETS.

COVENT GARDEN, January 24.

Cut Flowers, &c.: Average Wholesale Prices.

	s. d. s. d.
Anemones (pink) doz. bunches...	3 0-5 0
Azalea indica, per doz. bunches ...	4 0-5 0
Azalea mollis, bun.	1 0-1 6
Bouvardia, per doz. bunches	6 0-7 0
Calla æthiopica, per dozen blooms ...	2 0-4 0
Camellias, doz. ...	2 0-3 0
Carnations, per dozen blooms, best American various ...	4 0-6 0
— smaller do. ...	1 6-3 0
Cattleyas, per doz. blooms	9 0-12 0
Chrysanthemums, per doz. specimen blooms ...	3 0-6 0
— small blooms, per doz. bchs.	6 0-10 0
Cypripediums, per doz. ...	2 0-2 6
Eucharis grandiflora, per doz. blooms... ...	3 0-4 0
Freesias, per doz. bunches ...	2 6-3 6
Gardenias, per doz. blooms	2 0-3 0
Helleborus, doz. ...	1 0-1 6
Hyacinth (Roman), doz. bunches...	4 0-9 0
Lilac	2 6-4 0
Lilium auratum ...	2 6-3 0
— lancifolium, rubrum and album	2 0-3 0
— longiflorum ...	4 0-6 0
Lily of the Valley, p. doz. bunches	6 0-9 0
— extra quality ...	12 0-15 0
Mignonette, dozen bunches	3 0-4 0
"Mimosa," dz. bun.	9 0-12 0
Marguerites, white, p. doz. bunches	2 0-3 0
— yellow, doz. bun.	2 0-3 0
Narcissus, "Paper White," doz. bunches ...	1 6-2 6
— Soleil d'Or ...	1 6-3 0
— Golden Spur, per doz. bnchs.	6 0-9 0
— Sir Watkin, per doz. bunches...	8 0-12 0
— Telemonius, plenus, per doz. bunches..	6 0-9 0
Odontoglossum crispum, per doz. blooms	2 6-3 0
— grande, per dozen blooms	4 0-5 0
Pancratiums, doz.	3 0-5 0
Pelargoniums, show, doz. bun.	4 0-6 0
— Zonal, double scarlet... ...	8 0-12 0
Ranunculus, doz. bunches ..	10 0-18 0
Roses, 12 blooms, Niphetos ...	2 0-4 0
— Bridesmaid ...	3 0-6 0
— Kaiserin A. Victoria ...	4 0-6 0
— C. Mermet ...	3 0-8 0
— General Jacqueminot	10 0-12 0
— Liberty .	9 0-12 0
— Mad. Chatenay	4 0-8 0
Stephanotis, per dozen trusses ...	4 0-8 0
Tuberoses per dozen blooms	0 4-0 [illegible]
— on stems, p. bun	1 0-2 0
Tulips, p. doz bnch	6 0-9 0
— special quality	15 0-18 0
Violets, 12 bunches	1 0-2 0
— special qual	2 0-3 [illegible]
— Parma, French, large bunches	3 0-5 [illegible]

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0
— — medium, bunch ...	1 0-2 0
— — short sprays per bunch...	1 0-1 6
— Sprengeri ...	0 6-1 0
— tenuissimus ...	0 6-0 9
Adiantum cuneatum, doz. bun....	6 0-9 0
Berberis, per bunch	2 6-3 0
Croton leaves, per bunch	0 9-1 3
Cycas leaves, each	1 6-2 0
Fern, English, p. dozen bunches ...	2 0-3 0
Fern, French, doz. bunches .	3 0-4 0
Galax leaves, per doz. bunches ...	[illegible] 0-2 6
Hardy foliage (various), per dozen bunches...	[illegible]-6 0
Ivy-leaves, bronze	1 6-2 0
— long trails per bundle ...	1 0-2 0
— short green, doz. bunches...	2 0-3 0
Moss, per gross ...	5 0-6 0
Myrtle, per dozen bunches	3 0-6 0
Smilax, per dozen trails	1 6-4 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Ampelopsis Veitchii, per dozen ...	6 0-8 0
Aralia Sieboldi, per dozen ...	5 0-8 0
— larger	12 0-15 0
Araucaria excelsa, per dozen ...	12 0-30 0
Aspidistras, green, per dozen ...	18 0-30 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	9 0-10 0
— tenuissimus per dozen ...	9 0-12 0
Azaleas, each.... ...	2 0-3 6
Begonia Gloire de Lorraine, dozen	6 0-18 0
— Turnford Hall,	6 0-18 0
Callas, per dozen...	8 0-12 0
Chrysanthemums, per dozen ...	8 0-12 0
Cinerarias, per doz.	9 0-12 0
Clematis, per doz.	8 0-9 0
Crotons, per dozen	12 0-30 0
Cocos Weddelliana, per dozen ...	12 0-30 0
Cyclamen, per doz.	10 0-15 0
— extra quality ..	18 0-21 0
Cyperus alternifolius, dozen ...	4 0-5 0
— laxus, per doz	4 0-5 0
Dracænas, per doz.	9 0-24 0
Erica gracilis, doz.	12 0-18 0
— gracilis alba ...	18 0-24 0
— caffra	9 0-12 0
— hyemalis ...	12 0-24 0
— melanthera ...	12 0-18 0
Euonymus, per doz.	4 0-9 0
Ferns, in thumbs, per 100	7 0-10 0
— in 48's, per doz.	4 0-10 0
— in 32's, per doz.	10 0-18 0
Ficus elastica, p. doz	9 0-18 0
— repens, per doz.	5 0-8 0
Genistas, per doz.	12 0-15 0
Hyacinths (3 in pot), per doz. ...	12 0-15 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen ...	12 0-21 0
Latania borbonica, per dozen ...	9 0-18 0
Lilium Harrisii, per dozen ...	24 0-36 0
— lancifolium, per dozen ...	18 0-21 0
Lily of the Valley, per dozen ...	18 0-30 0
Marguerites, white, per dozen ...	6 0-10 0
Narcissus, per dozen	8 0-[illegible] 0
Pelargoniums, per dozen, zonal	3 0-7 0
— scarlet ditto ...	3 0-4 0
Poinsettias, doz....	9 0-12 0
Privet, golden, per dozen	5 0-12 0
Rhododendrons, per doz.	18 0-30 0
Selaginella, dozen	4 0-6 0
Solanums, dozen...	6 0-12 0
Spiræa japonica, per dozen .	8 0-12 0
Tulips in boxes, per doz. bulbs ...	8 0-12 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apricots (Cape Colony), p. box	5 0-6 0
Apples:—English, per bush:	
— Blenheim Pip'n	6 0-10 0
— Wellington ...	8 0-14 0
— Californian Newtown Pippin, per case ...	8 6-14 0
Nova Scotians, per barrel:	
— Fallawaters ..	23 0-26 0
— Wagners ...	17 0-20 0
— Russets ...	24 0-24 6
— Baldwins ...	21 0-24 0
— Ribston Pippin	19 0 —
— Blenheim Pip'n	18 6-21 0
— Greening ...	16 0-24 0
— King of Tompkin's County ...	26 0-27 6
Canadian, per barrel:	
New York Imperials... ...	29 0 —
— Russet... ...	26 0-29 0
— Greening ...	24 0-25 0
Baldwins ...	24 0-26 0
Bananas, bunch ...	
— No. 1 quality .	6 0-7 6
— No. 2 quality..	5 6-6 0
— Extra quality...	9 6-11 0
— Doubles ...	8 0-10 0
— Giants, per bunch	12 0-14 0
— Jamaica ...	4 0-5 0
— Loose, per doz.	0 8-1 0
Cranberries, case...	14 0 —
Custard Apples ...	4 0-9 0
Dates, Tunis, per box	0 4 —
— Egyptian, cwt.	18 0-23 0
Grape Fruit, p. box	8 0-9 0
Grapes, Alicante, per lb.	1 0-2 0
— Gros Colmar, per lb.	1 0-2 0
— Muscats, lb. ...	4 0-[illegible]
— Almeria, per barrel	15 0-21 0
Lychees, per box...	1 2-1 3
Lemons:	
— Messina, case	8 6-16 0
Mangos, doz. ..	2 0-4 0
Nectarines (Cape), per box ...	8 0-10 0
Nuts, Cobnuts, per doz. lb... ...	7 6-8 0
— Brazils, p. cwt.	40 0-42 0
— Spanish, p. bag	31 0-34 0
— Barcelona, per bag	24 0-24 6
— Almonds, p. cwt.	33 0-34 0
— Monkey Nuts, per bag ...	17 0-19 0
— Walnuts, dried, cwt.	35 0-40 0
— Chestnuts, Italian per bag ...	14 0 -
— Cocoanuts, 100	10 6-12 6
Oranges, Valentia, per case ...	9 0-24 6
— Navel	21 0-22 0
— Jaffa	10 0-12 6
Jamaica ...	9 6-11 0
— Mandarines, per box (25) ...	1 0-1 2
— 50	1 9-2 0
— Palermo, per 100	3 3-3 6
Peaches (Cape) ...	6 0-8 0
Pears, Californian, box ...	12 0-14 0
— stewing varieties, per ½ bush.	2 6-3 9
Pineapples, each ...	2 0-4 6
Plums (Cape) p. box	5 0-7 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, Green French, p. doz.	1 9-2 6
— Ground, ½ bush.	1 9-2 0
Asparagus, per bundle:—	
— Paris Green ...	4 9-5 6
— Sprue	0 7½-0 9
Beans, French, p. lb	1 3 —
— Flageolet, box	0 10 —
— Home grown, per lb	2 0-2 6
— Channel Island	2 0-2 6
— Madeira, bask.	2 6-3 0
Beetroot, bushel ...	1 0-1 3
Broccoli, per doz.	1 3-2 0
Cabbage, per tally	2 0-3 0
— red per dozen	3 [illegible]
Chow Chow, p. doz.	1 6-2 0
Carrots, French pad	2 3-2 6
— cwt., unwashed ...	1 6 -
— bag, washed ...	2 0-2 3
Cauliflowers, doz.	1 0-2 0
— Italian Heads, per basket .	2 0-2 6
Celery, p. doz. bdls.	5 0-10 0
Celeriac, per doz.	1 0-2 0
Cucumbers, dozen	8 0-12 0
Endive, per dozen	1 9-2 0
Horseradish, foreign, per dozen bundles	10 0-11 0
Kale, Scotch, bush.	0 [illegible] -
Leeks, 12 bundles	2 [illegible]-2 6

Vegetables: Average Wholesale Prices *(continued).*

	s.d.	s.d.
Lettuces, French, per doz. ...	0 11-	1 2
Mushrooms (house) per lb.	0 6	0 9
— Buttons, lb. ..	0 10	-
Mint, per dozen ...	6 0	—
Mustard and Cress, per dozen pun.	1 0	—
Onions, Valencia, per case .	6 9-	7 0
— Dutch, bag	3 9-	4 0
— pickling, per bushel	2 6-	3 0
— French, ½ bag .	2 6	3 0
Parsley, 12 bunches	2 0	3 0
Parsnips, per bag...	2 6	—
Potatos (new) :—		
Canary, cwt....	12 0-	14 0
— French (new), per lb	0 3	0 4

	s.d.	s.d.
Potatos, Channel Island Kidneys	0 7-	0 8
Radishes, French breakfast, p. dz.	1 0-	1 6
Rhubarb, per doz.	0 10-	1 0
Salsafy, p. dz bdls.	3 6-	4 0
Savoys, per tally ..	3 6-	4 6
Spinach, per bushel	2 0	—
Sprouts, ½ bushel ..	1 0-	1 6
Sea Kale, per bun.	0 10 -	1 0
Tomatos :—		
— foreign, bundle of 4 boxes ...	8 0-	12 0
Turnips, per doz. bun ...	1 6-	2 0
— bags .. .	1 9-	2 6
Turnip Tops, bush.	0 6-	0 9
Watercress, per doz. bunches ..	0 6	—

Remarks.—A good supply of Grapes is maintained, bunches of exceptional quality making from 1s. 9d. to 2s. 6d. per lb., but prices generally are moderate. Foreign Tomatos are plentiful, in fact the supply exceeds the demand. Pineapples are making enhanced prices owing to a shorter supply than is usual at this season. Foreign Apples are dearer. Best quality Oranges are scarce, and prices for good fruits have advanced; the major portion of these fruits now arriving are of inferior quality. A large consignment of Egyptian Dates arrived in a bad condition. Two thousand barrels of Nova Scotian Apples were offered at auction on Monday, 22nd inst., and sold readily. Trade generally has not improved. *E. H. Rides, Covent Garden, Wednesday, January 24, 1906.*

Potatos.

Blacklands, 55s. to 60s. ; Bedfords, 65s. to 75s. ; Lincolns, 65s. to 75s. ; Kents, 70s. to 80s. ; Dunbars, 80s. to 95s. per ton *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

There is little that is new to record this week. Trade continues dull. Not quite so many good pot plants are seen. Plants of Azalea indica in various colours are plentiful, but some are not well flowered. Azalea mollis does not sell readily. Spiræas, though good, do not find much demand. Lilium longiflorum are fairly good. Also lancifolium album and rubrum. Cinerarias are not quite up to the usual standard of quality. The cold weather affects the sale of Poinsettias. Cyclamen are fairly plentiful, but many are not of best quality. Marguerites are good and plentiful. Supplies of Chrysanthemums are not quite finished, but most of the plants now seen are of very poor quality. Callas, although good, are rather tall. Hyacinths are abundant; the majority are grown three in a pot but some are in boxes, and some in quite small pots singly. Tulips are over plentiful, these are chiefly grown in boxes. Some well-flowered plants of Rhododendron Cunningham's White, are seen. Daffodils Golden Spur and Telemonius plenus are good. Begonia Gloire de Lorraine continues plentiful, but some growers do not send it quite up to the best market standard. Among Ferns, Palms and other foliage plants there is little change. Supplies are plentiful and the demand limited.

Cut Flowers.

Daffodils are now a prominent feature, the varieties being Golden Spur, Sir Watkin, Princeps, and Telemonius plenus. Owing to large supplies many are cleared at very low figures. Narcissus poeticus is already plentiful, and Soleil d'Or, Paper White, with others of the Polyanthus type, are over abundant. Roses are not numerous and best blooms are making good prices. Supplies of Carnations, except those of specially good bloom, continue in excess of demands. Chrysanthemums are to be had still, but as many spring flowers are now in season the demand for them has fallen off; very late varieties of this flower do not pay so well as those at a more seasonable period. Lily-of-the-Valley has been over abundant for some time. Azalea Fielderi, Camellias, white Pelagonium, and other short stemmed flowers have little demand. Callas, although abundant, appear to be selling rather better. Lilium longiflorum is not so plentiful, but they have not become much dearer. Tulips are seen in immense quantities, and there must be much waste with these flowers. French flowers are sent in large quantities and are cleared very cheaply. All kinds of foliage is well supplied. *A. H., Covent Garden Market, January 24, 1906.*

THE WEATHER.

THE WEATHER IN WEST HERTS.

A change to cold weather. The recent term of warm weather lasted 15 days, during which there did not occur a single cold day or night. On the 20th a change to cold weather suddenly took place, and since then, although the day temperatures have been only slightly below the average for the time of year, the exposed thermometer on one night registered 16° of frost—the greatest cold experienced here this winter. The ground has become colder, and is now at about a seasonable temperature at two feet deep, and about 1° colder than the average at one foot deep. During the first three weeks of the present month rain fell on all but four days, and to the total depth of 3¾ inches, an inch in excess of the average for the whole month. We have to go back to the end of May and beginning of June to find three weeks equally wet, and even then the rainfall was not nearly as continuous. Since the 21st the weather has been perfectly dry, if a few flakes of snow on one day be excepted. Seventeen gallons, or nearly the whole of the rainfall of the recent wet period, has come through each of the percolation gauges. The sun shone on an average during the week for 2⅓ hours a day, or for an hour a day longer than is usual at this season. The wind has lately varied greatly in strength. In the windiest hour of one day the mean velocity amounted to 23 miles—direction W.N.W., whereas throughout the calmest day the average rate of movement was less than half a mile an hour. The mean amount of moisture in the air at 3 p.m. was 6 per cent. less than is seasonable for that hour. *E. M., Berkhamsted, January 21, 1906.*

ANSWERS TO CORRESPONDENTS.

Books: *F. B. The American Carnation: How to Grow it,* by Charles Willis Ward (New York: A. T. De La Mare Printing and Publishing Co.).—*C. A. J. The Book of the Rose,* by Rev. A. Foster-Melliar, price 6s. 4d., post free; or *Pictorial Practical Rose Growing,* by Walter P. Wright, price 1s. 2d., post free. Both these books can be obtained from our publishing department.

British Gardeners' Association: *F. W., and others.* We are informed that the delay in issuing the pamphlets has been caused by the printers having been swamped with work in connection with the General Election, but they will be ready in the course of a few days. You should address your enquiries to the Secretary, Mr. John Weathers, Talbot Villa, Talbot Road, Isleworth.

Correction. The Boiler mentioned under "Enquiry" in our last issue should have been spelt Menlo not Mento.

Gardener's Notice: *T. G., Worcester.* If you fill the position of head gardener a month's notice is the least that should be offered you.

Grubs: *S. C.* The grubs are those of one of the Weevils; trap them with pieces of Carrot or Potato.

Habrothamnus elegans: *W. H. N.* The newer name you refer to is Cestrum elegans. According to your note the situation has been too hot and too dry for a specimen newly planted, and it would have been better to have shaded the glass roof for a time. The sun is sometimes too powerful, on a south aspect, for this plant, and it succeeds best on an east or west position. You will do well to cut the plant hard back, and, by suitable feeding, encourage the development of strong growths next season. The plant should be kept drier at the roots in the autumn and winter.

Hygrometer: *T. K. S.* The table you require is published in most of the meteorological manuals, but for practical purposes the observation of the wet and dry bulb thermometers is sufficient.

Moss on Lawns: *J. McC.* Remove as much of the moss as is possible by means of an iron rake, after which apply a good dressing of decayed manure or rich compost, spreading the whole evenly about half an inch in thickness. Towards the end of March or in April rake again with the iron rake, removing any rough and unsightly portions of the manure. When there is prospect of rain, sow a suitable mixture of grass seed, and rake and roll in the seed. Allow the grass to grow until the middle or end of May, then mow with a scythe, and afterwards keep under with the mowing machine. If the lawn is wet from stagnant water this must be removed by draining the land.

Names of Fruits: *J. J.* 1, De Neige; 2, Flower of Kent; 3, Blenheim Pippin; 4, Striped Beefing.—*G. G.* Lamb Abbey Pearmain.

Names of Plants: *R. R. Reading.* 1, Doodia lunulata; 2, Adiantum hispidulum; 3, Adiantum Waltoni; 4, Aspidium mucronatum var. laxum; 5, Pteris argyrosa; 6, P. tremula.—*J. W. B.* Bletia hyacinthina, Epidendrum cochleatum.—*Head Gardener.* 1, Echeveria metallica; 2, Strobilanthes Dyerianus; 3, Cypripedium venustum; 4 Rhœo (Tradescantia) discolor; 5, Dendrobium nobile; 6, Nephrolepis tuberosa; 7, Eulalia japonica variegata; 8, Epiphyllum Russellianum.—*Caldecote.* Cypripedium callosum.—*J. P.* 1, Daphne indica rubra; 2, Eupatorium petiolare.

Nymphæas in Fountain: *R. Sage.* We have submitted your question to Mr. James Hudson, whose success with Water Lilies in Mr. Rothschild's garden at Gunnersbury House, Acton, is so well-known. Mr. Hudson has kindly replied as follows:—"You have not stated what depth of water there is in the tank. Assuming it to be from 12 to 18 inches deep, because less than 12 inches in depth is not sufficient for any Nymphæa excepting such as N. pygmæa and its forms, the best mode of procedure would be as follows: Obtain some clean ordinary building bricks and place these tier upon tier for say 3 or 4 tiers, 5 bricks forming one tier with the corners just touching, and crossing the second over the first tier. Into the space thus formed place some clean drainage material as in the case of a pot plant. Then fill up to the top of the bricks with soil, pressing it down gently. This soil should consist of good loam broken into pieces, as for potting plants in the usual manner, and about as much in bulk of well decayed leaf-soil, with road scrapings or sand in addition up to about one fourth of the bulk of loam and leafsoil. Plant the Lilies into this mixture, just leaving the crown clear of the soil and sufficiently firm to prevent the plants from becoming loosened afterwards. As a finish, and in order to keep the Lilies firm, cover the surface either with spar or gravel stones such as would pass through a sieve with an inch mesh. It is a common mistake to plant these Water Lilies into pots, drainpipes and the like. In so doing the roots are too much confined, and both soil and water must of necessity become stagnant and sour. Under the system advised above, it is always possible to remove the bricks and extend the area of root action without causing any check to the plants, besides which the roots can ramify through the soil in a more natural manner. Any observant grower will note that the roots are predisposed to extension in a horizontal manner rather than downwards. We never use either peat or charcoal here in the cultivation of Water Lilies. It is not stated whether the conservatory is shaded or not. In order to succeed with Water Lilies in such a place no shade should be given, otherwise there would be a tendency to leaf development only.

Pines for Planting: *T. W. C.* We do not think there is any material difference in point of fragrance for the purpose you mention. Pinus austriaca, Laricio, silvestris, Pinaster, contorta inops, and, in sheltered situations, P. strobus, P. monticola, and the Douglas Fir Pseudotsuga Douglasi. Thuya plicata, the Lobbi of the nurseries, grows rapidly and is very fragrant. It might be mixed with the others. The retention of the leaves in the Oak, Beech, Hornbeam &c., is a matter of variety rather than of soil.

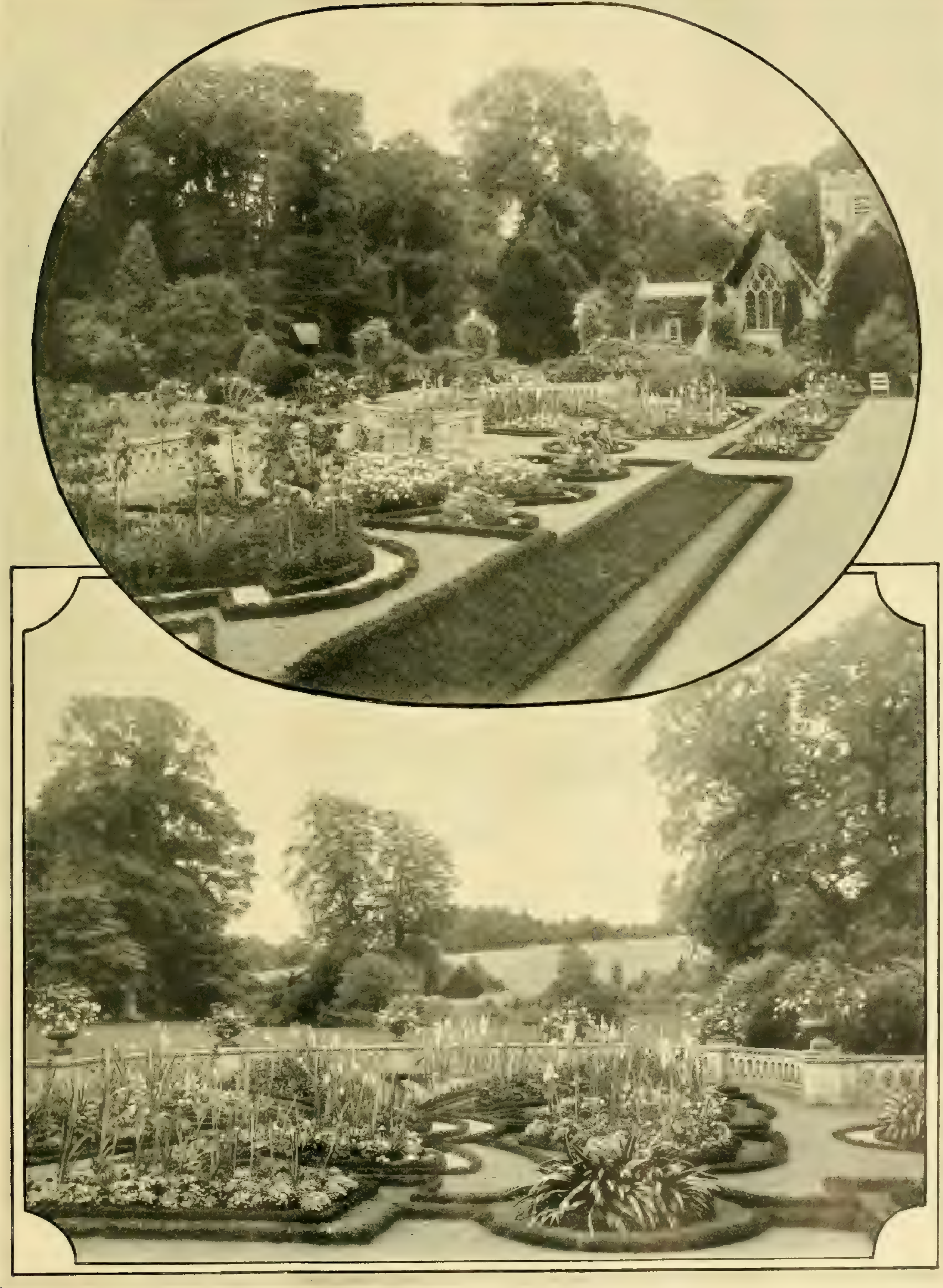
Quick Hedge: *J. W.* The quick-thorn Cratægus oxyacantha is very hardy and may possibly survive the application of tar; at any rate we should advise waiting another season to see the result before grubbing the plants. Probably many of the younger shoots will suffer from suffocation. An application of Stockholm tar would have been preferable, as this is a vegetable product, and would not be so likely to injure the plants.

Stove Climber: *W. T. G. L.* The sudden failure is due to some check; no insect or fungus disease is present to account for it. Strong applications of chemical manure to the roots would be sufficient to cause the injury.

Twelve genera of plants for supplying cut flowers over a prolonged season: *Doubtful.* In attempting to guide you in the selection of choice hardy plants for the supply of flowers for cutting we take the opportunity to emphasise the desirability of growing few varieties, and those in distinct colours. For table decoration, or for vases, it is preferable to have two or three distinct colours in large quantities than to be compelled to carry out the arrangements in numerous small quantities of different shades or colours. For instance, taking Roses, it is preferable, for table work, to have 50 white and 50 pink coloured blooms than 100 in 20 varieties of all shades. This is equally applicable to Tulips, Stocks, Sweet Peas, Carnations, etc. In making this selection it would have been much easier to have named 24 genera than 12, but for your purposes we think the flowering plants in the following list indispensable. Narcissus (the finest of the Magni-coronati, Medio-coronati and Parvi-coronati groups), May flowering Tulips, Anemones (St. Bridgid), Lily-of-the-Valley, herbaceous Pæonies, Ten-week and East Lothian Stocks, Tea-scented and hybrid Tea Roses, Sweet Peas, Carnations, Lavatera trimestris splendens (pink and white), the newer varieties of Montbretia and a selection of the best varieties of Michaelmas Daisy. We are unable to recommend a plant that is known to be objectionable to cats.

Vines: *W. C.* The single rod system is best. If the vines are planted 4 feet apart, supernumeraries may with advantage be planted between them. If the supernumeraries are good canes grown in pots for fruiting this season you could crop them in that position.

Communications Received.—B. W.—P. M. T.—R. W. R., thanks.—J. W. D., next week.—J. Booth, Berlin.—A. W.—J. Meager.—Gardener, Norfolk.—F. F. L.—E. Ashdown.—T. T. T.—T. K. S.—G. H.—W. H. N.—C. T. D.—J. C.—A. E. L.—W. L. D.—J. B.—C. R.—T. S.—E. M.—D. R.—A. B.



Views in the Gardens at Lockinge Park, Berks, the Residence of Lady Wantage

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LOCKINGE PARK.

(See Supplementary Illustration and Figs. 31, 32, 33, 34.)

THE residence of Lady Wantage, near the small township of Wantage, in Berkshire, possesses most of the characteristics that go to make an ideal country seat. It is somewhat remote, being about five miles from the nearest railway station, which is known as Wantage Road, on the Great Western Railway line, at about sixty miles from London. The Wantage folk have a light railway of their own, which connects their town with this station, but the visitor to Lockinge, if he drives from Wantage Road, will not follow the light railway route through Wantage, but, on the contrary, turn to the left hand and enter a road which was made by the late Lord Wantage, and which traverses private ground all the way. One cannot help being impressed with the vast extent of the Lockinge estate, for on driving from the station, the route passes for 2½ miles through the park. In round numbers the estate consists of 30,000 acres of land, and of this area 14,000 acres are farmed by her ladyship. When it is remembered that this would provide 140 farms of 100 acres each, an idea may be formed of the immense area of land under the management of the home farm.

But our purpose is not to write in detail of the agricultural features of this estate, but rather of the gardens attached to the residence. And it may at once be said that of these the outstanding characteristic consists in the numerous flower-gardens that in summer form so brilliant a setting for the mansion itself. All the illustrations of the place published in this issue have been reproduced from photographs taken late last summer, and on reference to them it will be seen that there were flowers almost everywhere, and the parterres are so near to the dwelling, and they so surround it, that the building appears to be in the centre of a flower garden.

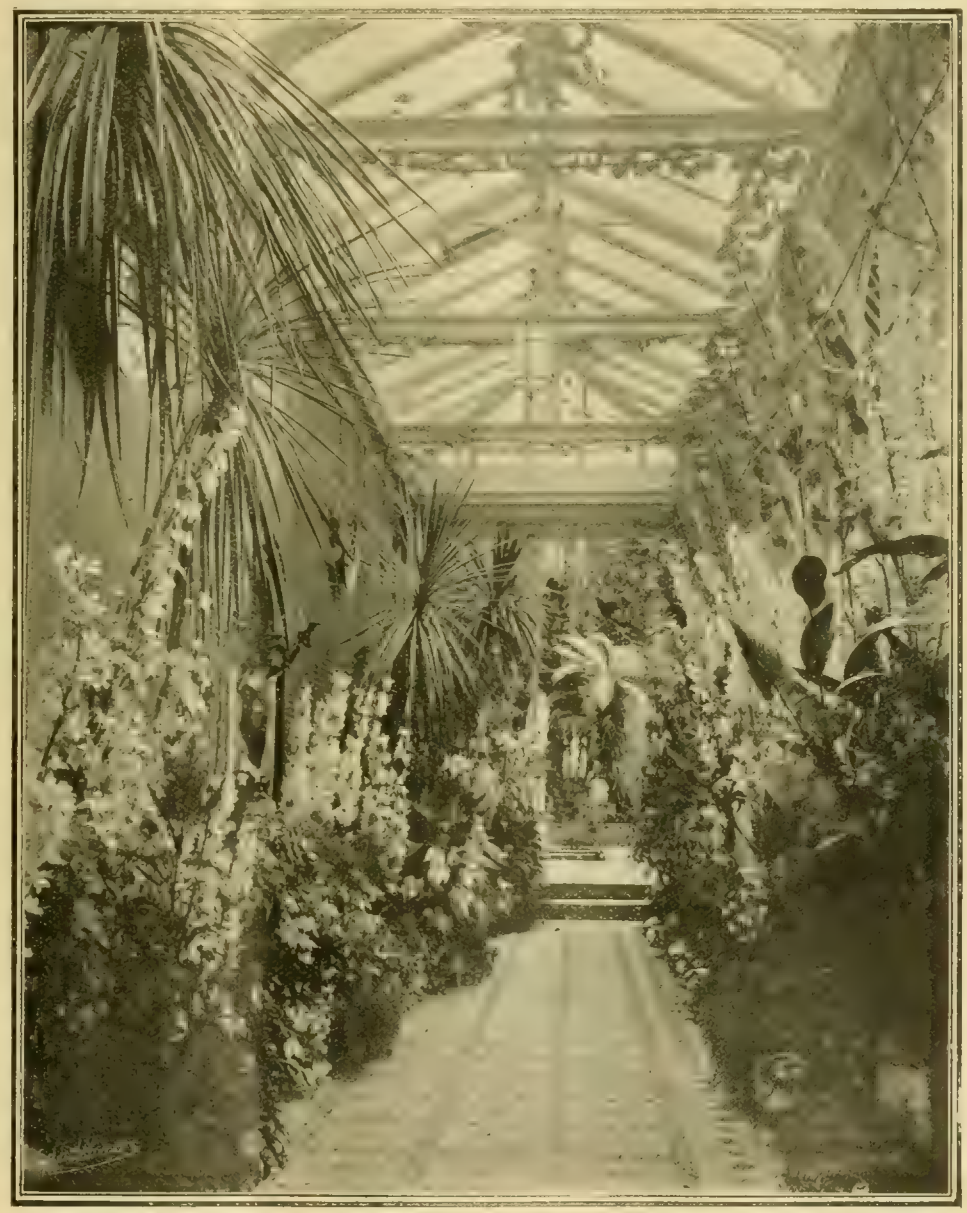

Fig. 31.—Lockinge Park: the corridor leading from the dwelling-house to the conservatory.

(From a photograph by W. J. Vasey, Abingdon.)

The views in the supplementary illustration are of the flower garden on the terrace facing the south front of the house. In the top picture appears the broad path leading towards the church, and the dwelling house, though not apparent, is situated on the right-hand side of the same path. This part of the flower garden has been remodelled by the present gardener, Mr. W. Fyfe, who has had charge of the gardens for 13 years past. The beds are arranged on two levels, those at the forefront of the picture being considerably higher than the pathway. The dark patches on the slope are of Box, and the space between the narrow edging and the Box slope is of red gravel, whilst the spaces around the individual flower beds at the top are covered with white gravel. The slope at one time was of grass, but considerable trouble was entailed in keeping it cut close, and altogether it was unsatisfactory. The present appearance is admittedly formal, but being associated with the mansion, conservatory and other buildings, and bounded with broad, straight paths, it is at least in keeping with its surroundings, and the effect is good. The first flower bed, which in the picture appears rather dull, was last season planted with Calceolaria amplexicaulis, and some standards, five feet high, were interspersed with the dwarfer plants. This old-fashioned plant grew and flowered abundantly—as well as we have ever seen it. In the next large bed were hybrid Verbenas, which appeared just one mass of flower. The beds on the lower level and opposite the point where the ornamental terrace wall assumes a half-circular shape, can be seen better in the photograph, which is reproduced in the lower picture. Some of the beds contained tuberous-rooted Begonias, and Gladiolus interspersed with them. Large specimens of Agapanthus umbellatus were plunged in small circular beds, and near by Nicotiana Sanderæ grew and flowered well, and was much appreciated. Before turning from the supplement, if the reader looks to the end of the path shown in the top picture, he will see a large specimen plant growing in a tub just behind the white-looking seat. Attention is drawn to this, because it is one of several such specimens of the lemon-scented Verbena (Aloysia citriodora). They are 12 feet in height, and nearly as much in diameter, being the finest plants the writer has ever seen of this fragrant species. Mr. Fyfe said that he raised them from cuttings about 13 years ago. They are so large that quantities of long green shoots may be cut from them without their being missed, and when in bloom their long panicles of pale-lilac coloured flowers have as elegant an effect as those of the Tamarix.

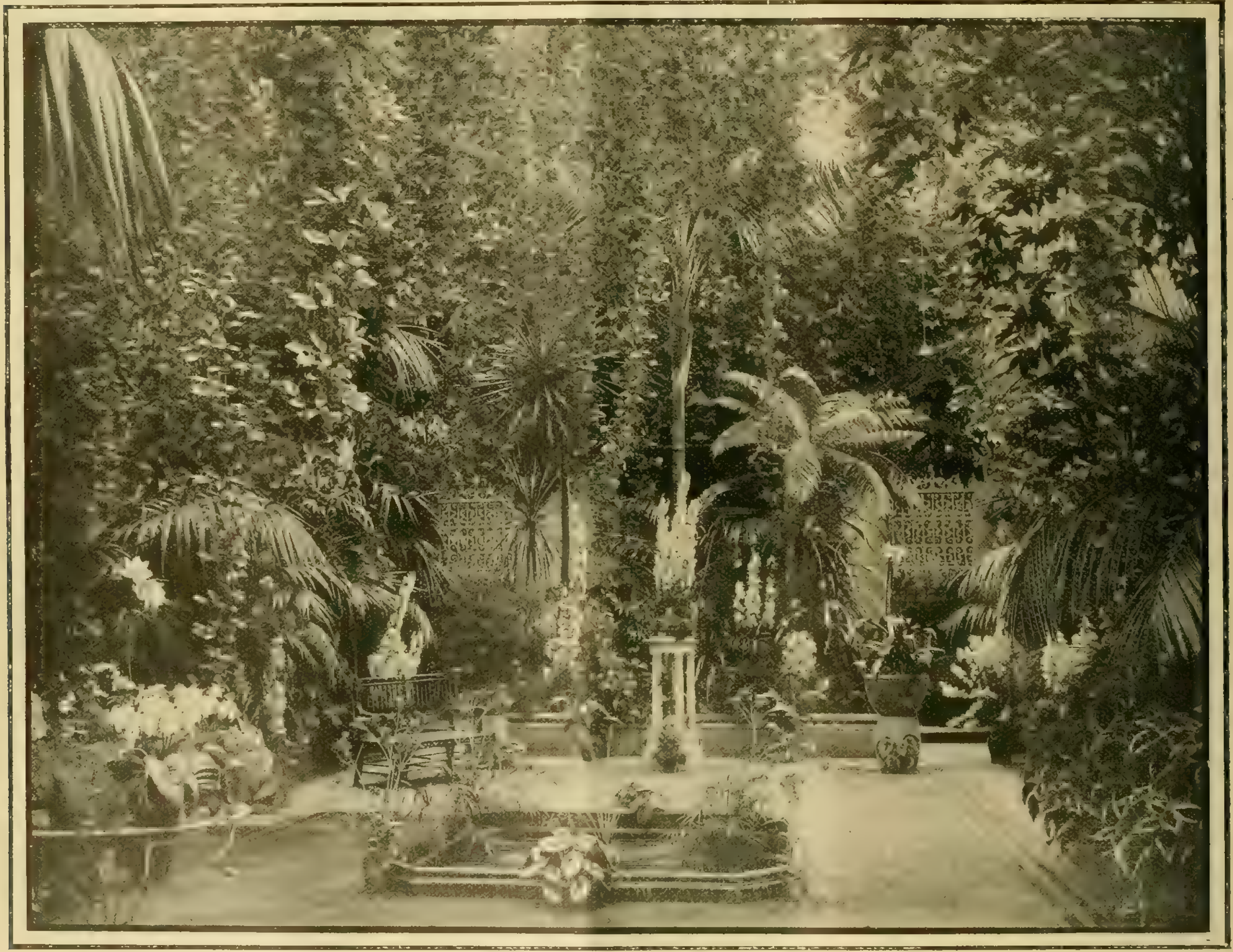

Fig. 32. LOCKINGE PARK: VIEW OF THE INTERIOR OF CONSERVATORY.

(From a photograph by W. J. Vasey, Abingdon.)

Reference may now be made to Figs. 31 and 32, because the structures shown in them are joined to the mansion, and face to some extent that portion of the flower garden shown in the supplementary illustration.

The gardens at Lockinge are not treated merely as an adjunct to the house, to be kept tidy, because being so near they would be disagreeable if allowed to get into any other condition. On the contrary, they are loved for their own sake; they enter largely into the every-day life of their owner, and every moment that can be spared is spent amongst the plants and flowers. The result of this affection for the garden is seen in the fact that the garden and house are brought into as close association as possible; very much closer association than is common. This is done by bringing, as it were, the garden into the house. Fig. 31 represents the interior of a corridor, and the reader may look towards the opening which leads into the conservatory. But if he turned round and walked in the other direction, he would enter what is known as the "garden room," which intervenes between and joins up the private rooms in the mansion and the afore-mentioned corridor. This garden room is something one is not accustomed to see in such residences. It is neither a conservatory nor a dwelling room, but partakes of the nature of both. The walls are adorned with very valuable paintings, some of which subjects are floral, but most of which are not, being portraits or landscapes, etc. Numerous plants and flowers are placed about the room, and so a person coming from the private sitting or drawing rooms is gradually brought into touch with the garden as he moves towards the gorgeously floral corridor, which last summer contained a quantity of well-grown plants of the chimney Campanula (Campanula pyramidalis), Cannas, Celosias, Liliums, etc

The conservatory, as seen from the corridor, is shown in Fig. 32. It was a handsome mosaic floor, a square tank in the centre containing a fountain, and is generally an ornamental structure. The ironwork that may be seen at the end is some interesting hammered metal, with mirrors at the back, which appear somewhat meaningless. Cobœa scandens, and many other trailing plants hang from the roof, and, in addition to plants with decorative foliage arranged on the floor, were such flowering species as Lilium speciosum, Cannas, Nerine Fothergilli, Streptocarpus, Campanulas, Crinums, Kalanchoe flammea, etc.

On the walls of the mansion and those of the garden room are some fine specimens of climbing plants, including Vitis Coignetiæ, Ceanothus azureus, Passifloras, and Ipomœa rubra cœrulea. This last-named species has grown 20 feet in height, and it flowers so freely the effect is brilliant. It may be mentioned here that Ipomœa rubra cœrulea is a favourite material at Lockinge for use in decorating the dinner table, and, accordingly, Mr. Fyfe obtains flowers at all seasons of the year from plants cultivated under different conditions for the purpose.

The photograph reproduced at Fig. 33 represents a broad border with the front broken up into projections of varied form. This border separates the little parish church from the mansion, some ten or fifteen paces north-east of the church. The border last season was planted in some measure as a ribbon border. The front line was composed of Lobelia, and behind it in succession were dwarf Antirrhinums, Ageratum, fibrous-rooted Begonias, and Veronica Hendersoni variegata. In the background were standard plants of the yellow-flowered Marguerite, the double-flowered white Datura (Brugmansia), Heliotropium, Ivy-leaved Pelargoniums, etc. Many of these taller plants were growing in tubs, and are kept from season to season. In the beds that constitute so formal a front to the border, standard Lantanas were associated with Colcus and other plants. Mr. Fyfe has found the varieties of Lantana now obtainable exceedingly useful plants for the flower garden, and owing partly to their habit of blooming continuously over a long period they are used in considerable numbers.

If a line were to be drawn at right angles with the further end of the ribbon border, it would stretch across the west front of the mansion, and here again there are flowers very close to the building. But in this instance they are of perennial herbaceous species, which are cultivated on a border of liberal width that is just on the far side of the terrace wall. Whilst writing of the west front, it may be interesting to explain why the parish church (built in 1564) is so close to the mansion, and has flower borders around it. The circumstances are these. Years ago, when Lord Wantage came first to Lockinge, the village extended to a point very near to the mansion on this, the west front, but during his late lordship's life he acquired considerable ground, and the cottages were removed. In the words of a local inhabitant, the village was "pushed back." But there were difficulties in regard to the church, and therefore whilst this sacred edifice remains in the old position, its environs are quite altered, and it is now, as already stated, surrounded by flowers and pleasure grounds. Nevertheless it is a public place of worship, as of yore, and the parishioners come to the building as freely now as they ever did. On the north side, there was last season a border planted with Antirrhinums facing to the house, and there are three old pyramid Yew trees which Lord Wantage brought with him when removing to Lockinge. A carriage drive leads up to this side, and there are deep rockeries on the banks. Proceeding from the house and walking to the south-west, there is a brook which has been made interesting in several places. A photograph, showing a fern-covered bridge across this water, was reproduced as a supplement to the *Gardeners' Chronicle*, October 28, 1905. Another view of a stream (which contains a large number of trout in the deeper portions) is afforded in Fig. 34, at a point where it winds through a portion of the pleasure grounds, with Cannas and many other species of suitable plants growing on its banks. A circular Rosary is a feature in the grounds, which extend for a considerable distance south of the house. There is plenty of timber in the large park, and some good specimen trees in the pleasure grounds. Indigenous species that appear to grow best are Elm, Buckthorn, Beech, and Oak.

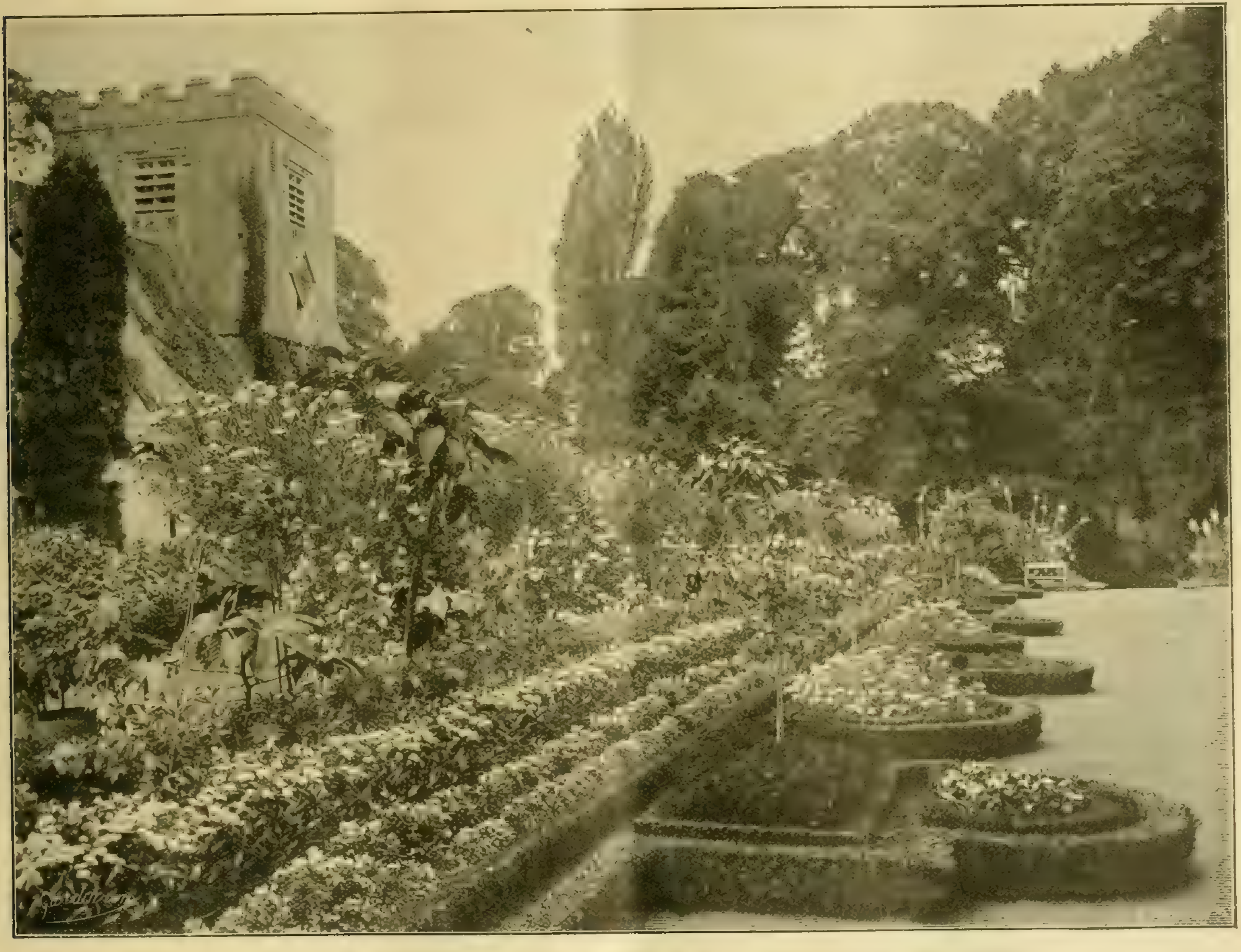

Fig. 33.—Lockinge Park: showing a ribbon border near to the old parish church.
From a photograph by W. J. Vasey, Abingdon.)

Fruit Houses, etc.

It is not possible on this occasion to write in detail of the plant and fruit houses. On the whole, they are of the kind one would expect to be employed at such a place. Vines, Peaches, Figs, Pines, Melons, Cucumbers, and Tomatos are cultivated in considerable quantities, and Strawberries are forced in the house in winter and spring. Mr. Fyfe's system of Vine culture was explained again and again in these columns in 1904, when he was engaged in writing the weekly calendar on fruits under glass. He is a great believer in the sound practice of encouraging the roots to multiply at the surface of the border, and whole turves are laid down in places to entice them to do this. A very uneven surface is thus left to the borders, but later a little top dressing containing bone meal and other manures is applied, and the results quite justify the methods adopted. When these notes were taken, in September, there were better Muscat of Alexandria Grapes hanging in the Lockinge Vineries than were afterwards exhibited at the Royal Horticultural Society's show in Vincent Square. Excellent fruit of Lady Downe's Seedling and Black Alicante were hanging at the same time, in addition to other varieties. In one of the Peach houses, the system of applying turf each year to the surface of the border has had a surprising effect on one of the trees, for, although it is of some age, and has a stem several inches in diameter, it has been induced to send out a root at a point just above the ground level, and where the wood and bark might have been expected to be too hard. It should be understood that by Mr. Fyfe's methods, the border is raised just a trifle as time goes on, and in some cases the trees adapt themselves to the conditions and make fresh tiers of roots. If Vines and Peaches could do this very easily and continuously, gardeners would have little reason to care much for the deeper roots, which in time would probably perish, just as those of the Poplar trees in the Belgian sand dunes. But they are incapable of doing this to an appreciable degree, and therefore if the covering up of the roots proceeds too hastily, the trees are liable to be suffocated. Thus, some who have imitated Mr. Fyfe in this matter, but have been less careful than he, have suffered from doing so. Melons are cultivated with all the success that could be desired, and in large numbers. The same holds good in regard to Tomatos, and Mr. Fyfe having convinced himself that Tomatos care little about the rooting medium supplied, provided it is perfectly well drained and that by some means sufficient nutriment is obtainable, has planted them in mere ashes and clinkers in one of the houses, with just one inch deep of soil over the roots, and they yielded heavy crops of fruit.

Just one word may be said about Rehmannia angulata, one of Messrs. Veitch and Sons' new plants, which is cultivated for furnishing the corridor, conservatory, etc. Mr. Fyfe cultivates specimens 11 feet in height, and one foot in diameter, and they flower profusely in spring in 7-inch pots.

Fortune's Yellow Rose, as most of our readers are probably aware, is one of the features of the plant houses at Lockinge. It grows and flowers abundantly each year.

The kitchen garden consists of 4 acres of land, and is situated on rising ground in the park. The soil there is neither plentiful nor of the best description, and the fruit trees cultivated against the walls have to be lifted every two years, or the leaves become thin and pale in colour, as though possessing no chlorophyll. For this reason, in most cases where re-planting has to be done, cordon trees are selected for the purpose. Good kitchen garden crops are obtained, but they are more the result of the gardener's skill than of suitable conditions in the garden itself. A crop of Onions raised at Lockinge was illustrated in these pages, April 1, 1905. *P. H. R.*

NOTICES OF BOOKS.

"The Fern Paradise." Francis George Heath. The Country Press. 7th Edition.

Mr. Francis George Heath has been so long before the public as the apostle of our native Ferns that it is disappointing to find by this new and enlarged edition that during the 27 years which have elapsed since the first one and the subsequent publication of *The Fern World*, &c., which by their comprehensive title would imply a complete survey of his subject, he has apparently learnt absolutely nothing new to extend the originally limited scope of his remarks. Certainly the title of this volume is justified so far as it applies to the scenic beauties of Devonshire, the author dilating enthusiastically upon these, the references to the common Ferns which contribute thereto being worked in to the utmost. This book, however, like the others on the same subject by Mr. Heath, simply traverses the same ground over and over again, ostensibly telling us all that there is to be told about our native Ferns, while doing nothing more than describe and figure the normal types and their habitats as many cheaper and handier books have previously done. The rest is mere eulogy. As regards the British Ferns proper, it is almost inconceivable, considering the literature extant, that not even the remotest allusion is made to the varietal side of the subject, though many of the more beautiful varieties known were found wild in precisely the localities he describes. There is consequently not a word relating to the many ardent Fern lovers to whose efforts we are indebted for far more lovely forms than those Mr. Heath treats of, and in the chapters on the Common Polypody and the Hartstongue he does not even mention the Welsh Polypody (P. v. cambricum) or the Frilled Hartstongue (S. v. crispum) which have been known for a century or more. No reference is even remotely made to other instructive literature, and the impression is generally conveyed that Mr. Heath, and none but he, had ever dealt with British Ferns or advocated their culture. We look in vain for any evidence that he really possesses a proper comprehension of what our native Ferns are *as a whole*. On page 154, too, we find the following statement :—"Ferns that grow in wild woods and open spaces are in the free right of all who choose to gather them." This is a distinct incentive to that vandalism against which all true Fern lovers have long protested, and against which the law itself has recently and properly pronounced. We note, too, in this connection that the author himself, in finding a rare Fern (Asplenium lanceolatum), had no hesitation in uprooting it to ascertain what it was. He asserts too that "many Ferns which grow in Devonshire are never seen in other counties" (p. 214), while there is not a single species in Devon which does not grow in many other parts of the country. He also describes Ferns as seed-bearing plants, and seems generally to confound seeds and spores as identical.

Alien Flora of Britain, by Stephen Troyte Dunn. West, Newman & Co.

This work comes to us from far-off Hong Kong. The author, who was at one time an assistant in the Kew herbarium, was unexpectedly appointed to the Botanical and Afforestation Department at Hong Kong. Pressure of official work, therefore, prevented him from arranging his notes on the waifs and strays of the British Flora, but by the aid furnished by his wife he was, he tells us, able to bring the work to a conclusion, so far as the absence of the standard works on the geographical botany of Europe permitted him. The difficulty of determining, in all cases, whether a plant is really native and aboriginal, or whether it has been introduced at some more or less remote epoch is much greater than the ordinary observer would suppose. In the work before us Mr. Dunn gives us some indications of the methods of observation and the deductions from them which enable botanists to say this plant is an "introduction," this is an old inhabitant, and that one a genuine native. A plant found growing on a wall can hardly be considered as a "native." A plant flourishing in a hedge-bank has also doubtful claims to be considered as a native. Out of 924 aliens enumerated in this book 123 are old-established weeds of uncertain origin, 332 are due to horticulture and arboriculture, while 206 are grain-sifting [sifted ?] aliens of recent appearance and of little permanence. The plants enumerated are named in conformity with the *Index Kewensis*, and arranged in their genera and orders in the sequence of the *Genera Plantarum*. It is surprising to read that Escallonia rubra grows on cliffs in northern Ireland, evidently as an escape from gardens, and equally surprising to find a doubt entertained of the status of Galium aparine, seedlings of which are at this very time occurring in profusion on the side of ditches and in hedge banks, localities which give rise to suspicion. The hedgerow protects it at this stage, whilst its rampant habits and hooked prickles enable it to shift for itself at a later stage and to dispossess other less well-endowed plants. Ceterach officinarum grows in a locality within eight or ten miles of London, but under circumstances which lead one to think it may have been introduced with stone from the West of England. A similar remark applies to Cotyledon Umbilicus; on looking through Mr. Dunn's book we begin to wonder how many real original natives he would admit. Even the common Groundsel is looked upon with suspicion, and so is the common Tansy, though it grows on river banks in the Thames Valley side by side with Lythrum salicaria and Spiræa Ulmaria, whose claims to be a native are not contested. Arum italicum is, we think, more common in Kent, near the sea, than is generally supposed ; it grows in spots far away from gardens and seems as spontaneous as Arum maculatum itself. From the different general appearance it presents as contrasted with the cultivated plant it is a subject for enquiry whether, after all, the Kentish plant may not be a well-marked variety of A. maculatum, with which it often grows in association. From these disconnected remarks it will be seen what a mine of interest Mr. Dunn has provided for those who love our native plants. For our own part we are not disposed to look with disdain upon the "introductions" and "newcomers." There is as much interesting information to be obtained as to their history and as to the how and why they have succeeded in establishing themselves as there is in the study of the conditions which enable us to call others—"wild flowers." A good index completes a book which will be of great service to students of "ecology" and of plant associations.

NEW AND NOTEWORTHY PLANTS.

A NEW CHINESE LILAC WITH PINNATE LEAVES.*

Syringa pinnatifolia.—At first sight this new Lilac might be taken for a variety of the Persian, as it certainly resembles Syringa persica, var. laciniata, but on closer examination it proves to be a distinct species. It differs in all the leaves being distinctly pinnate, that is divided to the midrib into separate leaflets ; in the lanceolate acute leaflets of much thinner texture, and very minutely fringed on the margin ; in the rounded lobes of the calyx ; and in the relatively longer corolla-tube. Syringa pinnatifolia, as I propose naming it, was imported by

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* *Syringa pinnatifolia, Hemsley ;* species nova, S. persicæ var. laciniatæ similis, a qua imprimis foliis omnibus pinnatis et foliolis lanceolatis acutis distincte disjunctis differt. *Frutex* 6-8 pedalis, fere omnino glaber, ramulis floriferis gracillimis. *Folia* cum petiolo communi gracili 2-3 poll. longa ; foliola 7 vel 9, sessilia, tenuia, infra medium latiora, ½-1¼ poll. longa, apiculata, margine obscure ciliolata, venis subtus sat conspicuis. *Flores* albi, circiter semipollicares, in paniculas axillares sessiles graciles quam folia breviores dispositi, pedicellis brevibus gracillimis. *Calyx* circiter lineam longus, lobis brevissimis rotundatis. *Corollæ tubus* angustus, circiter ½ poll. longus ; lobi ovato-oblongi, apice rotundati, circiter 1½ lin. longi. *Stamina* paullo sub apice tubi affixa, fere sessilia ; antheræ inclusæ. *Stylus* bifidus, quam corollæ tubusdimidio brevior. *Capsula* ignota.

Messrs. James Veitch & Sons, through their collector, Mr. E. H Wilson, who discovered it in the extreme West of China, at an elevation of 9,000 feet. Like many of his discoveries, it appeared to be quite rare, and no seed was collected, but a young plant was brought home safely. Mr. Wilson describes it as an elegant bush, six to eight feet high, with very slender branches and white flowers. It has not yet flowered in this country, so far as I know, but judging from the dried specimens I venture to predict that this new Lilac will prove a welcome acquisition.

I wonder why one so seldom sees the cut-leaved Persian Lilac in gardens? Is it because it is a shy bloomer? Philip Miller, according to whom it was introduced into England upwards of 260 years ago, and before the ordinary Persian, states that "on its first arrival it did not flower for some years, but afterwards it became hardy, and produced its flowers in plenty every year." *W. Botting Hemsley.*

CONIFERS FOR LARGE GROUPS.

The general introduction of ornamental Conifers into our pleasure-grounds dates from about sixty or seventy years. This is rather difficult to realise for those of us at least who are unable to remember the appearance of gardens and pleasure grounds before the middle of the last century. We look upon Cupressus macrocarpa and Thuya plicata (the gigantea of gardens) now rearing their heads 60 or 80 feet high, and assume that they must have been here for a much longer period, yet the former was introduced in 1847, and the latter in 1854. As a matter of fact we are only now in a position to judge of the size to which they are likely to grow, the habit they are likely to assume, the effect they have in relation to one another, and the general aspect they give to the landscape. Their beauty (at least in the young state) we have long learnt to appreciate, and to some extent we have been told by travellers what we might expect regarding their later development, but the information we have had has not always proved trustworthy in this direction, because some plants, which grow to good-sized trees in their native habitat, with us in England do not make anything like the same headway. Sciadopitys verticillata, for instance, is said to grow 50 or 60 feet high in Japan, whilst we have some difficulty to get it beyond 15 or 20 feet.

There must have been some difficulty about the middle of the last century among planters of Conifers who had no matured plants to judge by. Their dilemma is apparent now in many instances where what should have been handsome specimens are so crowded that each is ruining its neighbour. The planter in these days can form a much better conception of the amount of ground each species is likely to require when matured, not from observation of plants growing in exceptional soil or under exceptional shelter, but under ordinary conditions.

The colour of Conifers can be seen, of course, in most instances, at a fairly early age; though perhaps this does not hold good in all. From the dark, glossy, luxuriant green of Pinus radiata [= insignis] there is an almost endless variety of shades to the silvery hue of Abies concolor; and from the gold tint of Taxus baccata aurea to the bronze tint of Cryptomeria elegans.

The outlines of the members of this order are exceedingly diverse, and what is perhaps the most curious feature is the propensity of some to alter their physiognomy during growth. In some cases the form characteristic of youth is completely altered, and there is no trace of it in the matured plant. The mode of growth, too, is very varied; some are columnar, some conical, others broadly conical, and others rounded. They will grow well in well-drained soil of loamy character, but are impatient of cold or sodden soil. They receive dressings of manure kindly, and generally speaking are not difficult to cultivate nor fastidious in their requirements.

The following species are well adapted for planting in groups. To realise the true beauty of a group of Conifers one has to stand in an open space (a small lawn, for instance), around which have been planted Conifers of varied height, colour, and shape; or to walk between these plants when there is room to view each from a short distance. Where there is lack of room, it should be remembered that twenty healthy and symmetrical plants are much more pleasing to look at than a hundred trees crammed together in a space where their proper development is an impossibility.

Some little care is needed when the plants are young to make sure that their leaders are not damaged, or if a leader should be injured to find another shoot and train it up. When they are out of reach this is no easy matter, still it is worth while rigging up a pair of ladders and a pole rather than to leave the plant to spoil or become contorted. The loss of a leader may not only throw a plant out of its proper shape at its apex, but its symmetry may be spoiled. A little judicious pruning may be required in any case, but this is not often wanted.

Pinus radiata, better known as *P. insignis*, makes a truly noble tree, growing from 70 to 90 feet high, covering a space 60 feet in diameter, and is of a lovely green colour. The lowest branches are bent upwards, leaving the base of the tree exposed when there is not ample light all round.

P. excelsa grows to about 70 feet in height, is very graceful in appearance; impatient of crowding, though it will admit of closer neighbours than P. radiata. Its colour is silver-grey, shape pyramidal [very variable in this respect.—Ed.] covering a space 50 feet in diameter.

P. Ayacahuite.—A little-known but handsome Mexican tree, the cones of which measure a foot or more in length; height 50 feet. It covers a space 50 feet through.

Cedrus sp.—Cedars are uncertain; the Deodar at least has not fulfilled in its maturity the promise of its early and middle life. C. libani is too well known to need description; it is not well fitted for a group. C. atlantica makes a good specimen, with a height of 70 feet, covering a space 60 feet through.

Sequoia gigantea (Wellingtonia) is a magnificent tree, conical in shape, 80 to 100 feet high. It covers a space 50 feet through.

Abies Webbiana grows 80 feet high, is conical in shape, and bears handsome purple cones; the foliage is dark green with glaucous lines on the under side of the leaves. It covers a space 30 feet through.

A. Nordmanniana.—This is a handsome species, broadly conical in shape, attaining a height of 80 feet, and covering a space 50 feet through.

A. religiosa is a tree which grows 90 feet high, with long pendent branches; it is somewhat impatient of overcrowding, and is liable to be injured by wind. Where it is sheltered it makes a magnificent specimen.

A. concolor.—In this the foliage is glaucous green; it is a handsome plant, and will probably make one of the best when matured; it is said to grow 100 feet high in its native habitat.

Picea Morinda Smithiana.—A noble, broadly conical tree, the colour of the foliage light green. It grows 70 feet in height, covers a space 30 feet through, the branchlets drooping fountain-like.

P. excelsa, the common Spruce, may be planted for protection, but is not a great favourite for ornamental work.

Araucaria imbricata.—A tree attaining a height of 50 feet, and covering a space 30 feet through. If the soil is such as to admit of this plant having enough water without being stagnant, it forms the handsomest of all Conifers either for a group or as a specimen.

Cunninghamia sinensis.—This is something like Araucaria imbricata, but is much more delicate. It suffers greatly if exposed to wind. I have seen a specimen about 30 feet high covering a space 25 feet through, but even in the most favoured situation it is a risk to plant it.

Cryptomeria japonica makes a handsome tree 60 feet high, covering a space 25 feet through.

Cupressus macrocarpa grows 70 to 80 feet in height, and 25 to 30 feet through. It forms a splendid tree to plant for shelter or in an ornamental group; near the sea, or inland if planted in an exposed position, it is liable to lose its leader rather quickly.

C. Lawsoniana.—A free grower, conical in shape; height 30 feet and upwards, and 10 to 12 feet through. Some of the varieties are remarkably beautiful.

Juniperus communis may be anything from a trailing plant upwards, to a height of 20 feet.

Pseudotsuga Douglasi, the Douglas Fir.—A handsome Conifer which in good soil and situation reaches 100 feet in height and 40 feet through.

Cupressus (Retinospora) pisifera grows 20 feet high and about as many through. A most desirable plant for a group, as are also C. filifera, C. obtusa (about the same for size), while C. ericoides is dwarfer and exceedingly attractive. [These are all juvenile stages of species of Cupressus, and are liable to revert to the specific form.]

Sciadopitys verticillata, unfortunately, does not do well with us. It grows 15 to 20 feet in height and 7 or 8 feet through, and is a very curious-looking plant, but rather fastidious.

Sequoia sempervirens, the Redwood, grows to a great height; it does well on most soils, but shows a brownish-red on its dead leaves if not well suited. A large tree, but not covering a great space.

Taxus baccata var. fastigiata, the Irish Yew, is a dark-green foliaged tree, 25 feet high, columnar, and will stand any amount of pruning.

Thuya dolabrata, a very beautiful plant, 20 feet high, 12 to 15 feet through; it loves a warm, well-drained soil.

T. plicata [= the T. gigantea or T. Lobbi of gardens] grows to a height of 60 feet and is about 7 or 8 feet through, columnar. A very striking effect is produced by grouping this remarkable plant judiciously. Sometimes this plant assumes quite a conical shape. [Few Conifers bear the knife so well as this.—Ed.]

Podocarpus andina.—A Conifer of great beauty, with dark-green, shining leaves; it grows 20 to 23 feet high and 15 feet through.

There are a number of plants in cultivation which are members of this Order that have been well known for a much longer period than those named above, but to give their names is unnecessary. On the other hand, there are many handsome Conifers whose constitution is now being tested in many parts of this country and in Ireland about which it is hardly safe to say anything yet regarding their fitness to withstand our climate. If the appearance of their youth is any forecast of that of their age, then Abies brachyphylla and other Japanese kinds, as well as Pinus Montezumæ and P. ponderosa, and many others, will add to the beauty and interest of the pleasure-ground. *H. W., Trevince, Redruth, Cornwall.*

ORCHID NOTES AND GLEANINGS.

ONCIDIUM AURIFERUM.

A compact branched inflorescence of this pretty and uncommon species is sent by Messrs. Hooley Bros., Bitterne Park, Southampton, who received it with an importation of Odontoglossum luteo-purpureum from New Granada. It is an ally of O. panchrysum, and like that species the light green stems of the flower-spikes have a delicate bloom. The flowers, which are about ¾ inch in length, are of light yellow colour, with some reddish brown markings on the sepals, petals and base of the lip. It is a cool-house Orchid and an attractive plant on account of its bright yellow flowers and compact habit.

LÆLIO-CATTLEYA × EXONIENSIS.

A flower of this fine Veitchian hybrid comes from Mr. W. T. Hurlstone, Parkfield Gardens, Worcester, whose remarks on the plant are interesting. "Our largest plant has 21 bulbs and three leading growths. The bulbs and leaves together are nearly 2 feet in height. The plants have been here since 1876." It is interesting to find that such fine specimens exist of the original stock which first flowered with Messrs. Jas. Veitch and Sons in 1866, and was described by the late Professor Reichenbach in the *Gardeners' Chronicle*, 1867, p. 1,144, as Cattleya exoniensis. The flowers are 6 inches across, with pale lilac-tinted sepals and petals, the front of the lip being of a rich crimson-purple colour. Despite the large number of hybrids recently raised it is well worthy to rank with the best.

VANDA AMESIANA.

A clear white variety of this pretty and fragrant Orchid is sent us by D. Campbell Brown, Esq., Bank of Scotland House, Oban. The flowers which are 1½ inch across are pure white with three thickened light rose-coloured lines forming the crest of the lip. The species was imported in considerable quantity in 1887 by Messrs. Hugh Low and Co., from the hills of the Southern Shan States, India, and it has been found to thrive well in a cool intermediate house. It is winter flowering, and active growth commences in spring, from which time an increased amount of warmth and moisture should be afforded the plants until growth is completed. The flowers are usually tinged with pale rose colour, but, as in the present instance, are occasionally pure white.

COLONIAL NOTE.

NICOTIANA SANDERÆ IN CANADA.

I have read with interest the different experiences of cultivators of Nicotiana Sanderæ recorded in the *Gardeners' Chronicle*. My experience in this country is that as a bedding plant it is a partial disappointment, as the flowers close during bright sunshine, when the whole plant looks half dead. In Britain it may possibly behave better, owing to the more humid atmosphere.

As a pot plant, I have not experienced the same result as Mr. Etherington, p. 331, November 4. I sowed my seed in February, and the plants, in ten-inch pots, were in bloom during July and August. They all showed their flowering spikes within three weeks of each other, and developed into magnificent plants.

Nicotiana Sanderæ is seen at its best grown as a pot plant, for the colour of the petals varies little, and the flowers appear to develop to their best. The only fault I find with it as a pot plant is its variation in habit, for while one plant is perfect in form, another will throw up a long spike 5 or 6 feet in length, with strong straggling side shoots.

If the type generally seen in illustrations could be firmly fixed, I consider it would be one of the best plants introduced of recent years for conservatory decoration. As a plant for winter decoration in the conservatory, it gives great promise. I had a batch flowering splendidly in a cool conservatory about the first week in September, and with another later batch I hope to maintain a succession of flowers all through the winter. For cut purposes the flowers are splendid, the colour showing well in artificial light. *Chas. Craig, Gardener to A. Joyce, Esq., Rockland House, Outremont, Montreal.*

The Week's Work.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Muscat Grapes.—The structure containing these should be got in readiness for forcing the vines without delay, in order to allow a sufficient period for the proper development and finish of the bunches before Autumn. The Canon Hall variety of Muscat requires great attention to detail in order to develop it to perfection. If the vines are young, say, three, four, or five years of age, the rods should be brought down to a horizontal position, in order to obtain an even "break" on the leading shoots, but the buds on the spurs or side growths will generally start away satisfactorily. The leading shoot of the main rod is often not cut sufficiently short at pruning time, with the object of furnishing the vinery with permanent bearing canes in as short a time as is possible. When this is practised the canes will often "break" with great vigour at the top of the rod, leaving the lower buds of the shoot very feeble. Two to three feet of new growth, according to the strength and the ripeness of the young wood, is ample to allow each year. The night temperature of the vinery when forcing is begun should be about 50° or 52°, and during the daytime 55° to 57°. Well syringe the rods with water, as this will tend to make the buds swell and burst into growth.

Early Cherries form an agreeable adjunct on the dessert table. A few trees should be introduced into a cool house, and forcing very slowly commenced, as these trees are most impatient of fire heat, 40° to 45° at nights, with 5° degrees higher in the day, being all they require. The trees should receive a rich top-dressing of loam and bone-meal prior to forcing in order to encourage the feeding roots near to the surface. Abundance of ventilation should be given, and if the ventilators are allowed to remain open a trifle at night time it will be beneficial. A sharp watch should be kept for green and black fly, which are amongst the chief enemies of the Sweet Cherry.

Grapes in bottles.—These should be examined daily, and any decayed berries on the bunches removed. The end of the stem should always remain in water, and by keeping the bunches in the dark as much as is possible the berries will retain their colour for a long time. An equable temperature of 45° should be maintained. Lady Downes and Black Alicante are two excellent late keeping varieties.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to F. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Clivias (Imantophyllums).—Where sufficient plants are grown for the purpose, they may be had in flower during the next three months by introducing a few plants at intervals into an atmospheric temperature of 55° to 60°. If grown in six inch pots they are useful for house decoration, their richly coloured flowers and graceful foliage rendering them very effective. The present is a good time to increase the stock either by sowing seeds or by division. Provide perfect drainage and pot the bulbs in rich loamy soil with the addition of bone meal. An abundant supply of water is essential during the growing season.

Plants for Table Decoration.—Any of these which may have been used for decorating the dwelling rooms will now need attention. Codiæums (Crotons) will have lost some of their lower leaves, and in consequence they are of no further use as table plants. The tops, however, may be rooted by the method known as "ringing." Take a sharp knife and make two or three cuts upwards in the bark, and a little into the hard wood immediately under the lower leaves, afterwards binding some moss around the portion which has been cut. Keep the moss in a moist condition always. When roots have been made, the stem may be severed and the rooted plants again potted. Thus treated they will soon prove useful again.

Acalyphas.—Cuttings of young wood of Acalyphas should now be inserted singly in small pots, and if placed in heat they will soon make roots, and become useful plants for furnishing in a small state. The foliage will have a much better colour if the plants are grown in a somewhat cool atmosphere, and are fully exposed to the influence of the sun; especially should this treatment be afforded in summer. The foliage will then be comparatively hard, and, apart from the improved colour, be capable of withstanding the adverse conditions in the dwelling-rooms. A. Macafeeana and A. musaica are two of the best varieties for the purpose mentioned above.

Fittonias.—Where large vases or the base of screens have to be filled with plants and edged with dwarf growing species, Fittonias will be found to be very useful. Shallow pans may be used for propagating the cuttings, and when the latter have made roots tie them round with damp moss and place them together in shallow boxes, and they will be convenient for use when required. This is a much better method than that of growing them in pots. Large quantities can be accommodated in boxes and be kept within a limited space.

Hydrangea paniculata grandiflora.—Some of the plants growing in pots and having well-matured their growths may now be pruned hard back before they commence to make new growth. If very fine heads of bloom are required it will also be necessary to thin out the young shoots after growth has commenced, leaving four or six of the strongest to each plant. If medium-sized trusses of bloom are preferred all that is necessary is to allow a greater number of shoots to develop. Place the plants in an atmospheric temperature of 55° to 60°. Apply occasional waterings with liquid manure during the growing season. Though the above is often spoken of as Hydrangea paniculata there is a considerable difference between H. paniculata and the variety grandiflora.

Violets in frames should now be yielding a wealth of flowers. Keep them free from decayed leaves and lightly stir the surface soil occasionally. If the soil is at all dry afford a good soaking with soot water and diluted liquid manure from the cowsheds. On fine, warm days remove the lights entirely for a few hours. Free ventilation at all times is essential for Violets growing in frames.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Zygopetalums.—The present is a good time to repot Zygopetalum Mackayii, Z. crinitum, Z. triste, Z. Protheroeianum, Z. brachypetalum, Z. Clayii, Z. Murrayanum, Z. Perrenoudii, Z. Burkei, &c., if any of the plants require to be moved. Good fibrous loam, chopped sphagnum moss, and plenty of broken crocks, if well mixed together, will form a suitable compost for them to root in. The atmosphere of the Cattleya or intermediate house will suit them, and they will require plenty of water at the root when growing and rooting freely. Z. maxillare thrives best when fastened to an upright piece of Fern stem and allowed to climb around it. A shaded part of the cool house will suit this species.

Masdevallias.—The present is a good time to divide old plants, or to afford more root room to the Chimæra section of Masdevallias, which includes M. Chimæra, M. bella, M. Backhouseana, M. Wallisii, M. Winniana, M. Houtteana, M. radiosa, M. trinema (Lowii), and M. erythrochæte. These plants should be grown in shallow teak-wood baskets, and as their flowers are produced from descending stems, no crocks must be used for drainage, but a few tough, well-dried pieces of fern rhizome may be placed across the bottom bars of the baskets to prevent the compost from falling through. A moderate quantity of peat and sphagnum-moss well mixed together, but not compressed very tightly, will afford a suitable rooting medium. During the next two or three months repotted plants should be suspended well up to the roof glass in a shaded position in the intermediate house. Afford water with the fine sprayer whenever the surface of the compost appears to be in the least dry, and frequently sponge the under-sides of the leaves to prevent the lodgment of red spider. The pure white flowered M. tovarensis may also be repotted, and for cultural directions the reader may refer to p. 14 in the *Gardeners' Chronicle* for January 6, where a description was given of a method of culture which has been attended with great success. Any plants of the M. Harryana and M. Veitchii sections, or of the dwarf growing species that require fresh compost to root in, should be given attention at once. Well-rooted specimens in a healthy condition that were repotted last autumn should be given increased supplies of water, but not kept in a saturated condition at the root. Allow the compost about each plant to become properly dry previous to affording more water. The warmer end of the cool house is the best place for them. Do not damp between the pots when the weather is dull and wet, because an excess of atmospheric moisture at this season often causes black markings and spotting on the foliage.

In the intermediate house plants of Platyclinis glumacea are fast pushing up their rosy-coloured growths, and they should be elevated as near to the light as possible. From the present time until the pseudo-bulbs are thoroughly matured, afford the plants plenty of water at the root, and on all bright mornings well syringe the under sides of the leaves. It is also well to sponge them occasionally, as red-spider is very apt to make an appearance. The proper time to repot plants of this species is when they commence to grow, or as soon as the flowers fade. They will root and grow freely in the ordinary Orchid compost.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Herbaceous Plants.—Though September is undoubtedly the best month in the year in which to undertake the work of making new borders for herbaceous plants, and the renovation or the rearrangement of old ones, circumstances often make it necessary to postpone these operations until a later date. Failing the autumn there is no better time than the present to carry them out. The weather in February is usually open and mild, which will enable the plants to get sufficiently established in their altered position before the advent of the keen March winds, which otherwise might be detrimental to them. It is essential to prepare the soil in a thorough manner when making a new border, for once made it should remain undisturbed for a number of years. If the ground is not naturally drained, artificial drainage must be provided, as it is impossible to cultivate herbaceous plants well unless the soil is in the very best condition. Trench the border to the depth of three feet, and remove and replace with rich loam any soil of poor quality. When doing this add a dressing of basic slag, and a plentiful supply of well-matured farmyard manure. Where new borders are made in front of strong growing trees and shrubs, precautions must be taken to prevent the roots of these trees getting into the border. This can be done to a certain extent by providing a space between the shrubs and border, which can be deeply trenched every year and all roots removed.

Although much might be said in favour of borders on which the effect of the flowers is enhanced by the dark green foliage, and the bold appearance of shrubs as a background, yet when the opportunity offers itself, almost equally charming effects can be obtained by a flower border against a wall. Whether of stone or brick the wall can be quickly clothed with appropriate growth in such a manner that it will soon become an excellent background, and there will be no danger of encroaching roots, which, no matter the precautions taken, are always a menace to the best interests of the inmates of the border. In planting, avoid what is termed the "dotting" system of arrangement, and in preference adopt that of boldly grouping, but not stiffly, the plants in numbers, ranging from three to twenty or so, according to the habit of the plant and the size of the border. Borders are often spoilt by the use of too many kinds of plants. It is better to plant in groups, and limit oneself to fewer kinds. The habit, and the height of the plants must be considered in arranging them, and though generally the taller growing ones should be placed towards the back of the border, do not be afraid to allow some of them of medium height to approach the front and *vice versa*, groups of lesser growth to recede amongst the taller ones. A free and natural style is far more effective than a stiff "banking" arrangement graduated in regular heights from back to front.

Arrangement of colour.—In the matter of colour, very much depends upon the individual taste, but still there are certain rules regarding colours that cannot lightly be disregarded. As, however, it is intended to return to this subject in a future note (probably in September) it will suffice for the present to simply state that it is preferable in bringing colours together in a border of herbaceous plants to endeavour to create harmonies, and leave formations of contrasts to beds by themselves. There are certain colours like red and yellow, which retain their intensity, no matter from what distance they are regarded, and again colours like blue, which require to be viewed close at hand to be appreciated fully—facts to be remembered when arranging them. In arranging and planting the "herbaceous border," no one now thinks of merely including plants that strictly come under the category of hardy herbaceous plants. They of course predominate, but as the object is to achieve the best possible effect, Roses, tender bedding plants, hardy and half-hardy annuals, and bi-annuals are all used, and with decided advantage. Even many of the numerous flowering shrubs can be employed provided the border is of sufficient size to accommodate them. Therefore spaces should be left in appropriate positions in the border for planting at the proper time such plants as Dahlia, Hollyhock, Pentstemon, Antirrhinum, Salvia patens, S. splendens, S. farinacea, S. Horminum, Lobelia (the Cardinalis type and L. pumila), Gladioli in variety, Carnation, Pink, Marigold (African and French), Delphinium "Queen of the Blues," Phlox Drummondii, Scabious, Canna, Calceolaria amplexicaulis, Nicotiana Sanderæ, and Pelargonium, and also for sowing Lavatera splendens, Love-in-the-Mist, &c.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Planting.—January has been wet enough in this locality, over 5½ inches of rain having fallen. Any planting that has still to be done should be pushed forward in the event of the weather becoming suitable. Obtain some dry soil if possible, such as that from the potting bench, and mix it with mortar *débris* from old buildings, and with a mixture of this nature the work of planting may be carried on pretty comfortably. Work this dry soil in among the roots as much as possible, in order that the soil about the roots may be made firm, but on no account should wet soil be rammed.

Espalier Trees.—Examine the supports of espalier trees, and renew any that have become defective. Straight young Larch poles make admirable supports, and should be driven in straight with a mallet, and not closer together than is necessary for the support of the tree. If these stakes be dipped in creosote before use they will last much longer in good condition. Cut off the upper ends level by means of a saw. Bamboo canes may be tied to these with tarred string, in horizontal positions. When the work has been well done trees trained in this manner have a very good appearance. When pruning and training are done rake over the surface ground, dress the trees to kill insects or fungi, and then fork in a little manure if necessary, and leave the ground as tidy as possible. Let the label denoting the variety be placed in a position where it will be easily seen.

Apricots.—Wherever there are worn-out trees of Apricot, young trees should be planted in some position in the same garden, for the fruits are among the most delicious of those available for dessert. Apricot trees require a free loam, and plenty of lime rubble, which mixture should be very often renewed. The wood of Apricot trees may be very easily damaged, and if this occurs "gumming" very often follows. Nearly all the necessary pruning (stopping and disbudding) should therefore be done by means of the thumb and finger, in the early stages of growth. Many mistakes are made in cropping these trees too heavily, and another mistake is that of allowing the roots to become dry. Established trees should now be pruned by reducing the old spurs if necessary, leaving several flower buds and a leading wood bud. Lay in a good supply of young growths and take care they are not tied taut against a nail or wire, nor bruised with a hammer during the operation. Young trees that have made strong growths must be reduced in order to get a well-balanced start; these trees are generally trained on the fan system, and should a branch die, the branches left can be unfastened and redistributed; stop all holes and crevices in the wall in order to destroy vermin. Let the protective material be held in readiness for use when the flowers commence to open.

The Loganberry, Wineberry, and American Blackberries may still be planted.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Potatos.—Do not lose any favourable opportunity that may occur for planting the earliest crop out of doors, on a warm border sloping to the south, and if possible in front of vineries or other hot-houses. It is assumed that the soil has been well trenched and liberally manured with well rotted material, in order that the young tubers may acquire size as early as possible. Cover the sets with light soil, procuring some if the natural soil is of a heavy nature. May Queen, Ringleader, and Sharpe's Victor are three reliable and good varieties, and providing they have sprouted well in the usual way should give a return towards the end of May. Protection from frost at night will be necessary, as the young growths are very tender at the time they push through the soil. Loose, dry bracken or straw will protect them materially, but it is safer to make a temporary frame work and run down a blind over this at night time.

Peas.—The earliest sowing of Peas may now be made on a warm border, but as in the case of Potatos the soil must not be interfered with until it is dry enough to be worked without it sticking, or more harm than good will result. In late localities, or in others where the soil is of a heavy nature, it will be advisable to sow a round-seeded variety at this date to make certain that rotting of the seed will not take place through excessive damp. The marrowfat varieties, which are far and away the best, need to be sown in boxes, and started into growth indoors, and if such are transplanted early in March, they should come into bearing as early as the others. Sutton's Ringleader is an excellent variety of the former type, while Early Giant, growing also about 4 feet in height, is amongst the best early marrowfats. Chelsea Gem and Green Gem are two excellent dwarf-growing varieties that may be sown at less than 2 feet apart between the lines. On small narrow borders, when the lines are drawn, cover the seed with leafmould or other light soil.

Spinach.—A sowing of Spinach should be made as soon as possible on an exposed border. Like all other early vegetables Spinach succeeds best where the soil has been thoroughly prepared, and is in good condition to receive the seed.

Jerusalem Artichokes.—The tubers being perfectly hardy, the crop may be planted without delay. Assuming the soil to be in good heart, and that it has been deeply worked, let the tubers be planted in lines 3 feet apart, and allow 1 to 2 feet between them. Use good-sized sets in preference to small ones. The newer white variety is an improvement on the old purple one, and should be planted in preference to the latter.

Carrots.—It is rather early yet to sow carrots, but a sheltered spot, if available, may be made use of for raising a bed of the earliest variety at hand. Dig the ground well and sow the seeds in lines drawn at 6 inches apart, being careful not to cover the seeds too deeply. Use light soil for covering, and gently press it down with the back of a rake as a finish. Paris Market is a good type to sow at this date, together with Inimitable Forcing, which also turns in very quickly, to be followed with Early Nantes and Early Gem, all of which are first-rate varieties. If a rough frame can be spared for this crop a gathering will be obtainable at least a fortnight earlier. Make successional sowings of Peas, Potatos and Carrots in frames as required.

General Remarks.—As fast as the ground is cleared of Broccoli, &c., make every effort to get the same prepared for a future crop by trenching if possible, or at least digging the soil and manuring it to suit the next crop. The greater surface that can be exposed to the influence of the weather the better it will be for the crops.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents. *—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations. *—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers. *—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News. *—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Feb. 3	Societé Française d'Horticulture de Londres meet German Gardeners' Society meet.
TUESDAY,	Feb. 6	National Amateur Gardeners' Association meet.
FRIDAY,	Feb. 9	Annual Meeting of the Royal Gardeners' Orphan Fund and election of Candidates at Simpson's Restaurant, 101, Strand, London, at 3 p.m.
SATURDAY,	Feb. 10	Dutch Gardeners' Society meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—39·3°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, Jan.* 31 (6 P.M.): Max. 46°; Min. 33°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 1 (10 A.M.): Bar., 30·3 Temp., 47°. *Weather*—Slight rain.

PROVINCES.—*Wednesday, Jan.* 31 (6 P.M.): Max. 50° Ireland East; Min. 43° Cambridge.

SALES.

WEDNESDAY NEXT—
Sale of Roses, Shrubs, Perennials, 100 cases of Japanese Lilies, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY NEXT—
Hardy Border and Herbaceous Plants, 1,800 Roses, Lilies, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
Herbaceous and border plants, Liliums, Hardy plants at 1; 3,000 Roses, Palms, Azaleas, Rhododendrons, &c., at 3, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY NEXT—
1,800 Roses, Liliums, Hardy border plants and bulbs, Azaleas, Greenhouse plants, &c., by Protheroe & Morris, at 67 and 68, Cheapside, E.C., at 12.

FRIDAY NEXT—
Imported Odontoglossum Crispum and Cattleya Trianæ, choice established Orchids, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

Nomenclature. WE have from time to time had occasion to notice the vagaries of some of the American botanists who have of late years been employed in executing permutations in nomenclature. These changes have been made for reasons which doubtless seem valid to some naturalists, and so long as they were confined to strictly botanical books, we could look on with amazement, perhaps, but as horticulturists we were not justified in making any protest. If the botanists liked to indulge in such vagaries it was no concern of ours, and, however erratic their methods, the rules of synonymy and of publication render it easy to trace any particular plant under whatever name it may be masquerading. The cyclone is now, however, approaching our own territories.

Our valued correspondent, Mr. Smith, of Newry, writes:—

"Much has been said, from time to time, about the mischievous practice of multiplying names. The following have been taken from a current American catalogue, and I imagine are for the most part quite new, and inasmuch as they are given without any synonyms, further comment would appear to be unnecessary:—

Veronica virginica	is now called	Leptandra
Liatris	,, ,,	Lacenaria
Gillenia stipulacea ...	,, ,,	Porteranthus
Lysimachia	,, ,,	Steironema
Dielytra	,, ,,	Bicuculla
Goodyera	,, ,,	Peramia
Amianthemum ...	,, ,,	Chrosperma
Spiræa aruncus ...	,, ,,	Aruncus Aruncus
Darlingtonia	,, ,,	Chrysanthera
Halesia	,, ,,	Mohrodendron
Magnolia	,, ,,	Adelia
Calycanthus	,, ,,	Butneria
Ilex verticillatus ...	,, ,,	Decodon
Andromeda ligustrina	,, ,,	Xolisma
,, calyculata	,, ,,	Chamœdaphne
Ledum buxifolium ...	,, ,,	Dendrium
Ampelopsis	,, ,,	Parthenocissus
Laurus Benzoin ...	,, ,,	Benzoin Benzoin"

It is now time to protest, and to proclaim our allegiance, as we have done often before, to the nomenclature adopted in the *Index Kewensis* and in the works, such as the *Kew Hand-lists*, which have been framed in accordance with it. It is not that the Index is infallible—it does not pretend to be. But as a general standard it is the best that we are ever likely to see. No alterations in it should be lightly tolerated, and only monographers and specialists dealing at first hand with particular groups should be allowed to tamper with its pronouncements. The Botanical Congress, held at Vienna last summer, revised the "Lois" put forth by the late Alphonse de Candolle, and generally adhered to by European botanists. The Congress, we believe, negatived many of the proposals of the extreme neo-American school. But until the Report is issued we cannot say which of the names mentioned by Mr. Smith will be put under the ban.

A garden-catalogue is not drawn up with the precision and accuracy of a botanical monograph, so that there is no means of ascertaining in an ordinary garden-list who is responsible for any particular name and where and when it was published. In those matters the botanist has a great advantage over the gardener.

But there are worse grievances than changes of nomenclature consequent on differences of opinion on matters of technical detail. There are, we are told, names which may be found in certain catalogues, and in certain gardens, which have nothing to justify their existence. They do not occur in the *Index Kewensis* or its Supplements, nor, so far as appears, in any monograph.

In one case a correspondent tells us he found in English gardens the same species of Daphne under seven different names.

We have before us a marked catalogue containing scores of names which are not in the *Kew Hand-lists* nor in the *Index*. Such names, if genuine, should be authenticated by the name of the author, the place and time of publication, and other details such as botanists are accustomed to give when they describe what they believe to be new plants, otherwise they are open to suspicion.

ROYAL HORTICULTURAL SOCIETY. — We would remind readers that there will be no meeting of the Committee on Tuesday next, but that the annual general meeting will be held on the following Tuesday, February 13.

FLOWERING OF THE HAZEL. — Our record showing the expansion of the male flowers is earlier than usual, viz., January 22. The earliest date for several years is January 22, the latest February 21. The bushes observed are the same each year, and are in proximity one to the other.

NATIONAL CHRYSANTHEMUM SOCIETY. We are informed that the annual general meeting of the members of this society will take place at Carr's Restaurant, 265, Strand, W.C., on Monday, February 5, next, at 7 o'clock in the evening. CHARLES E. SHEA, Esq., president, in the chair and the usual business pertaining to the annual meeting will be transacted. The General Secretary (*pro tem.*), is Mr. G. R. DEAN, 8, Avonwick Road, Heston, Hounslow.

THE LATE MR. O. T. HEMSLEY. — The funeral of Mr. O. T. HEMSLEY, Superintendent of the Government Gardens, Lahore, who died at the Mayo Hospital on January 6 last, took place the same afternoon. It was, says a Lahore paper, a military one, Mr. HEMSLEY having belonged to the Punjab Light Horse, of which he was Quartermaster-Sergeant. The Corps paid a worthy tribute to a devoted Volunteer. The Commanding Officer, Lieutenant-Colonel GREY, the Adjutant, Captain CHEYNE, Major PEASE and Lieutenant PERCY BROWN attended; and Major ROBERTSON, Private Secretary to His Honour the Lieutenant-Governor, and Captain WRIGHT, of the 1st Punjab Volunteer Rifles, were also present. The charger of the deceased was led behind the remains, and the Police Band supplied the solemn music for the procession to the grave. The Rev. K. G. FOSTER conducted the service, and the firing party consisted of Light Horsemen. Sir CHARLES and Lady RIVAZ sent a cross and wreath, and similar floral offerings were brought by Colonel GREY, Major ROBERTSON, Captain CHEYNE, and many others, including Mr. A. PINTO, the Acting Superintendent, and the native staff of the Gardens. We are requested to insert the following note:—" Mr. and Mrs. BOTTING HEMSLEY and Miss HEMSLEY are deeply grateful for the appreciative and sympathetic announcements in the gardening Press relating to the great loss they have sustained in the death of their only son and brother. These notices have brought them so many letters of condolence and expressions of sympathy from friends far and near that it is impossible to reply to them individually, and they avail themselves of this means of conveying their heartfelt thanks to one and all.

THE FRUITERERS' COMPANY.—At a dinner given by this company at De Keyser's Hotel, Blackfriars, on the 25th ult., Mr. G. BUNYARD, the Master, presided. In the course of his remarks he stated that he was the first Master of the Company who understood the art of fruit-growing! Mr. EAGLETON, the secretary, said the Fruiterers' Company, in its desire to advance the art of fruit-growing, had come to the conclusion that it was of no use to try to teach new methods to grown-up people. Their efforts in the future were to be in the direction of instilling into the young mind new ideas and up-to-date plans whereby fruit could be grown to perfection in this country and a satisfactory profit made. Pamphlets had been issued, but now, on the suggestion of the Master and his greatly-gifted daughter, Miss BUNYARD, they were about to venture out in a new direction. A series of five charts, or diagrams, was about to be issued, illustrating the culture of fruit, and these would be hung in elementary schools. The idea had already been approved by upwards of a dozen county councils, and, later, they hoped to issue some thousands of sets.

ALL ABOUT SWEET PEAS.—Mr. ROBERT SYDENHAM has lately published the third edition of *All About Sweet Peas.* It is a booklet with a useful description of every known variety and instruction how to grow it. It contains a list of the best varieties for exhibition and other purposes, as well as information for the amateur or general grower. The newest varieties of Sweet Peas are, of course, mentioned.

CALATHEA ALLOUYA.—This is a disappointing plant. An excellent figure in the *Tropical Agriculturist* for December last naturally suggests that it would form a good substitute for the Potato in tropical countries. If the foliage were concealed the observer might fancy he had to do with

"Northern Star," so close is the resemblance in the mode of growth, but Mr. MACMILLAN, who furnishes the description, reports the results of several trials, which were all unsatisfactory, and so long as we have, says he, the "Sweet Pôtato" (Batatas) there is no need to trouble about the Calathea or even the ordinary Potato.

CELEBES.—Little is known in this country of the vegetation and productions of this island. We may, therefore, call attention to the "Reisen in Celebes," by PAUL and FRITZ SARASIN, recently published at Wiesbaden (Kreidel), in two volumes. The text is in German; it is copiously illustrated by excellent illustrations (some coloured), which show the nature of the country, the general character of the vegetation, the appearance of the inhabitants, their dress, and their weapons. There is no separate list of plants. The book may be had of Messrs. WILLIAMS & NORGATE.

NYMPHÆAS.—The catalogue, in Swedish, of Mr. M. P. ANDERSEN, of Jönkoping, contains details of some new hardy Water Lilies such as the miniature flowered N. fennica of Mela, and others, which would interest cultivators of these plants.

A FRENCH AGRICULTURAL JOURNAL.—The first number of the eighth yearly volume of *Le Mois Scientifique : Le Mouvement Agricole*, includes a review of MM. DE RIVIERE & LECQ's book on Agriculture in Algiers and Tunis; of that by DE M. KAYSER on Agricultural Microbiology, and of various publications on allied subjects. These reviews are valuable, being written by specialists in the various branches of agriculture under consideration.

THE ENGLISHWOMAN'S YEAR BOOK AND DIRECTORY FOR 1906.—Miss JANES is again the editor of this volume, which has become practically indispensable to every working woman. The subject matter includes Education, Employments and Professions, Industrial Pursuits, Science, Literature, Art, Sports, Philanthropy, &c.; all from the standpoint of woman's employments and interests. We note that in addition to agriculture and horticulture and florists' work the question of Settlements for women is carefully considered; in fact every effort has been made to keep the Year Book up to date. The publishers are Messrs. ADAM and CHARLES BLACK, Soho Square, London.

DENDROBIUMS AT GATTON PARK.—It is rumoured that the Dendrobiums in the collection of JEREMIAH COLMAN, Esq. (gr. Mr. BOUND), are better than ever this season, and it is intended to make a fine display at the Royal Horticultural Society's meeting on February 13. The annual general meeting of the society at Vincent Square will be held on the same day. Diplomas are also offered on the same date for Lælia anceps (white varieties), Cattleya Trianæi and hybrids, and Cypripedium villosum (including Boxalli), and hybrids of that section, consequently, with incidental exhibits, the show should be a good one.

THE WRITERS' AND ARTISTS' YEAR-BOOK.—This is a directory for 1906 for the use of writers, artists, and photographers. It is less bulky than the familiar *Willing's Press Guide*, yet contains not merely addresses of papers and magazines where MSS. and illustrations may be accepted, but many hints for intending contributors. The Year-Book will prove serviceable also to "the ever-increasing host of illustrators," but editors of popular publications who are already surfeited with contributions may not always welcome the additional work this may bring upon them. The publishers of this directory are Messrs. ADAM and CHARLES BLACK, Soho Square, London.

THE GARDENS AT UDAIPUR.—We have received, from Mr. T. H. STORY, the Annual Report on the Gardens of His Highness the MAHARANA FATAH SINGHJI BAHADUR, G.C.S.I., of Udaipur, Meywar, for 1904-5. Plague, rinderpest, and a severe frost were serious drawbacks to work during the season. The frost was particularly fatal to Mangos, Opuntias, Tamarinds, and other plants, and spoiled the lawns. The garden looked in most places like mid-winter in Europe, and sustained a loss that will take many years to repair. At the Observatory from 10° to 12° of frost were registered. This occurred in January, 1905.

APONOGETONACEÆ.—A monograph of these plants has been published by Mr. KRAUSE, with the assistance of Dr. ENGLER. Twenty-two species of Aponogeton were described, including the well-known Ouvirandra fenestralis, which is transferred to that genus. The plants are obviously closely allied to the Potamogetons, Alismaceæ, and Juncaginaceæ. The name Aponogeton is supposed to be derived from the name of an old bath, "Apone," near Padua. The species are mostly South African, with some Australian. They were first raised with a distinct order by PLANCHON.

EIGHT FOR NINE.—The printers of one of the American trade papers have, it is stated, struck because the master-printers do not see their way to accede to the proposal for an eight-hour day for nine hours' pay. There should be give and take in these matters, but the printers seem to prefer taking to giving.

SWEET PEAS.—It is said that the stock of Sweet Peas of the best sorts is rather low this season, and that some of the better kinds will in consequence be difficult to obtain in quantity.

FOREST FLORA OF NEW SOUTH WALES.—Mr. MAIDEN has just issued Vol. II., Part 7, of his valuable work: *The Forest Flora of New South Wales*. This instalment, which forms Part XVII. of the entire work, includes the descriptions and plates of Casuarina stricta (Drooping She-Oak). Eucalyptus numerosa (River White Gum) and Flindersia australis (Native Teak).

SCHOOL OF GARDENING.—Miss MAY CROOKE, F.R.H.S., late Instructor in Horticulture at Lady Warwick College, Studley Castle, and Lady Warwick Hostel, Reading, has obtained a suitable garden for horticultural instruction at Bredons Norton, near Tewkesbury. Miss CROOKE will take a limited number of students, either resident or non-resident. The garden is fully-equipped with glass-houses, mushroom-house, heated pits and a fine selection of fruit trees, and will afford facilities for horticultural instruction in all branches.

THE "BAMBOO" MAGAZINE.—We note the appearance of the first number of "*Le Bambou, son Etude, sa Culture, son Emploi*," founded and issued by M. JEAN HOUZEAU DE LEHAIE, Ermitage, Mons, Belgium. It is proposed to publish the magazine monthly, and its pages are to be wholly devoted to papers concerning the Bamboos, considered from their scientific, horticultural, and commercial aspects. Communications will be printed in Latin, English, French, German, Italian, and Esperanto, and will be contributed by specialists from all parts of the world. Illustrations are included in the pages. The opening number contains an article on Phyllostachys pubescens, on the Japanese method of planting, on the fructification of Bamboos in Europe, and kindred subjects, all connected with this subfamily. We wish success to the enterprising venture, which is addressed to all interested in Bamboos.

W. H. SMITH & SON'S ANNUAL.—A publication for the use of newsagents, containing spaces for a record of orders for various publications, and much information, profitable and interesting, for those to whom it is specially addressed. A portrait of the late Rt. Hon. W. H. SMITH, M.P., serves as frontispiece. The same firm also issue some handsome samples of fancy headings for commercial stationery. For further particulars address to Amberley House, 12, Norfolk Street, Strand, or to the Works, Fetter Lane, E.C.

FLOWERS IN SEASON.—We have, for several seasons past, received from the well-known firm of Messrs. WILLIAM BULL & SONS, King's Road, Chelsea, London, S.W., flowers of a number of named varieties of the florists' Primula. Those submitted to us during the past week showed careful selection, both in regard to colour and type of flower. The colours were of a wide range, from the white alba magnifica to the so-called blue of Imperial Blue, which is, however, more correctly to be described as lavender. There were also double-flowered forms, and still others of the fimbriated type, whose petals are pleasingly crenated. The old double white, or to give it its catalogued name, alba flora plena, is still one of the most desirable of all Primulas, for it is invaluable for furnishing a supply of cut flowers for cutting when white flowers are scarce. There are also blush rose, and still deeper coloured varieties of this useful type. Comet (carmine crimson), Countess (blush pink), Fulgens (scarlet), and Ruby Queen (magenta crimson) are four good varieties of the ordinary florists' strain.

HORTUS VILMORINIANUS—an appendix to the volume for 1904 of the *Bulletin de la Société Botanique de France*—is devoted to the systematic enumeration of the trees, shrubs, and herbaceous plants cultivated in the garden of M. PHILIPPE DE VILMORIN and in the trial grounds adjacent, at Verrières le Buisson, near Paris. The catalogue fills, with the index, over 371 pages —a detail we mention for the purpose of giving some idea of the richness of the collection. The list has been very carefully drawn up and richly illustrated, and abounds in relevant annotations. The preface contributed by Prof. FLAHAULT, of Montpellier, is a very interesting autobiographical sketch, introducing some account of DECAISNE which will be read with interest by those who were fortunate enough to be acquainted with that great botanist. The book before us, says M. FLAHAULT, is "the work of a VILMORIN. . . . He [the author] is the successor of those who for a century and a half have never ceased to associate the requirements of practice with scientific truth." M. PHILIPPE DE VILMORIN contributes in an introduction some account of the collections which he traces back to the 18th century, and sketches the additions made by successive members of the VILMORIN family. The collections of Conifers and of Alpine plants are very rich. Their nomenclature is according to the *Index Kewensis*, and their arrangement in accordance with the *Genera Plantarum* of BENTHAM and HOOPER. The catalogue was prepared as a consequence of the visit of the members of the Botanical Society of France to Verrières on the occasion of the fiftieth anniversary of the Society in 1904; and is in every way worthy of the occasion and of the present representative of the family which has done so much for horticulture and agriculture. The assistance of M. MOTTET is gracefully acknowledged.

TO HELP THE CHARITIES.—The tenth annual Bohemian concert organised by the Geo. Monro Ltd. Concert Committee will be held in the Queen's Hall, Langham Place, on Thursday, February 22, 1906. The proceeds of these concerts are devoted to charities. The amount given last year to deserving institutions was £35 14s., and of this sum the Gardeners' Royal Benevolent Institution received ten guineas. Tickets may be obtained from the Hon. Sec., Mr. H. Baker, 42, King Street, Covent Garden, London, W.C.

SEED LISTS RECEIVED.—We have received the list of seeds offered in exchange from the Botanic Gardens, Paris. Applications for any of the items should be addressed, as soon as possible, to M. le Directeur du Museum d'Histoire Naturelle (Service de la Culture), Rue Cuvier, 57, Paris.—*Catalogue des Graines Recoltées en* 1905, Villa Thuret, Antibes. Many interesting seeds are offered for which application should be made before March 1, to le Jardinier en Chef, M. B. Texier, or to the Directeur, M. Georges Poirault.

LEGISLATION WITH RESPECT TO PLANT DISEASES CAUSED BY FUNGI.

(Concluded from page 53.)

WITH regard to the well-known potato disease (Phytophthora infestans), it may be that the special difficulty mentioned by Mr. Massee exists in this case. But the matter is not so hopeless as to justify this writer's words as to the impossibility of legislation in connection with the disease. It would be the duty of the Government of a country where this disease is unknown to endeavour, by passing a law prohibiting the importation of potatos from a country where the disease was known to exist, to preserve their country's immunity. This duty has just been performed by the Government of New South Wales, who are trying to protect potatos in their country from this very disease by a law passed in March, 1905, prohibiting the importation of potatos from New Zealand, where the potato disease has lately appeared.

Turning now to the general question of legislation and the control of plant diseases caused by fungi, it must of course be admitted that in very many cases, as Mr. Massee says, legislation cannot, at all events at present, be called into operation. This is no new view, however, but was put forward very clearly by Prof. B. T. Galloway (then Chief of the Division of Vegetable Pathology) at the National Convention for the Suppression of Insect Pests and Plant Diseases by Legislation, held at Washington, U.S.A., in 1897. Prof. Galloway expressed his opinion then that the greater portion of our plant diseases and insect pests cannot be reached by legislation: "A vast number of fungus diseases are almost as universally distributed as the host-plants themselves." Among such diseases rust is mentioned. "It would be manifestly as impossible to control such enemies by legislation as it would be to control the dust of the air."

But Prof. Galloway goes on to say: "Of course, there may be special cases where laws would be an advantage. It may sometimes happen that a dangerous pest is imported, and, although established in one or more places, might be quickly and easily eradicated by prompt and intelligent action supported by proper legislation."

I contend that the Gooseberry disease mentioned above is eminently a case where legislative action by the authorities is required. As a general principle, too, whilst ready to admit that with our present imperfect knowledge of the life-history of many fungi, it is impossible in many cases to control, by legislative means, the diseases they cause, I maintain that each disease requires the most careful consideration by itself to ascertain whether its control or prevention lies within the scope of legislation.

For a demonstration of the economic importance of vegetable pathology, and the use of legislation in safeguarding the interests of agriculturists and horticulturists, we have to turn in the first place to the United States. Other countries are now following the example set by the United States in controlling the spread of fungus plant diseases by legislation; we may mention the "Orchard and Garden Pests Act" of New Zealand, and the laws passed recently by New South Wales, Sweden, and Finland. From an article by Prof. E. F. Smith, of the U.S. Department of Agriculture, Division of Vegetable Physiology and Pathology, on the subject of "Legal Enactments for the Restriction of Plant Diseases," we find that in 1896 no fewer than 14 States possessed legal regulations for the prevention of plant diseases. The same high authority, in his exhaustive governmental report on the fungus disease known as "Peach Yellows," spoke strongly in favour of employing inter-State legislation to prohibit strictly the importation of peach trees from the Eastern United States into California. The remarks made here[*] by Prof. E. F. Smith, on the subject of "Restrictive Legislation," may be commended to the readers of this journal.

The following is an instance of the good effects brought about by the passing of a State law in connection with fungus plant diseases. The following words are contained in a report made by the Secretary of the Californian State Board of Horticulture: "Prior to 1880, California had no State legislation for the protection of the horticultural interests, and the Eastern and Southern nurserymen found our State a convenient dumping ground for all their pest-ridden trees, until we became alive to the danger before us through yearly loss, and secured the creation of the State Board of Horticulture and the enactment of protective horticultural legislation. . . . What was the result? Each nurseryman pays strict attention, and sees that his stock is clear before shipment, else it will be quarantined at destination, and a certificate of inspection before shipment must accompany each shipment."

Mr. Massee, in the concluding part, asks that his article may not be taken as a tirade against legislation. Except for this warning, there certainly might have been this danger. If all the assumptions made by Mr. Massee were warranted scientifically, and if, as Mr. Massee apparently believes, the serious epidemic fungus diseases are seldom in evidence or capable of detection at the time of introduction into a new country, and that therefore it would be necessary for the Government to plant out and supervise for a year all imported living plants (surely a *reductio ad absurdum* of any proposed legislative action), the authorities might indeed have reason to believe legislation impracticable.

In conclusion, with reference again to the question of dealing with the American Gooseberry mildew—at the present moment a vital and pressing question—I cannot help expressing my regret that Mr. Massee should have published statements calculated to dissuade the Authorities from employing legislative measures to stamp out this disease. It is the more regrettable, since at the present time there is a movement on the Continent to establish an international bureau of plant pathology, in connection with an international institute of agriculture.[†] If our Government will support this movement, we may hope that at length the question of legislation and the control of plant diseases will receive the careful and scientific attention it has received in other countries. *Ernest S. Salmon, South-Eastern Agricultural College, Wye, Kent.*

CULTURAL MEMORANDA.

ACHIMENES, TYDÆAS, &c.

THE time of the year has arrived when a commencement may be made in the preparation of a small quantity of the stolons of Achimenes for early flowering in the stove and other warm houses. Providing the last season's masses are still undisturbed in the pots and pans in which the plants flowered, and this is always the best practice, a few of such varieties as may be desired should be shaken out of the soil, and the stolons collected and sized, the larger ones of about an equal size being reserved for starting into growth and treating as flowering plants, and the weaker to grow on as stock plants, which may or may not flower satisfactorily, but will certainly increase in size, becoming useful stolons the next year, Achimenes being mostly natives of tropical South America need a considerable amount of artificial warmth at the beginning of the year, and a free and porous soil, together with ample drainage, much water at the root being essential at the height of their growth. The best receptacles in which to start the stolons are pans or boxes of not more than 2 inches in depth, nearly half of which may be occupied with crocks, and the upper half with a coarsely-sifted mixture of leaf-mould and peat in equal proportions, together with a fair quantity of sharp sand. Having pressed down the soil evenly and firmly, place the stolons at about an inch apart, and rather more if these are of large size. In the case of A. picta, a pretty scarlet-flowered species, these are less than ½-inch in the longer diameter, and require a correspondingly smaller space. The stolons being duly placed on the soil, should then be covered with the compost to the depth of ½-inch, this being likewise pressed slightly and made smooth and level, the pans, &c., placed on a shelf in the stove, stove-pit, or propagating house, in which a night temperature of not less than 60° *Fahr.* is maintained, no water being afforded unless the soil should have become very dry, till the shoots have pushed through the crust; even so, a slight dewing over with a fine rose syringe is better than an application with a watering can. In this connection it may be stated that overhead syringings need not as a rule be indulged in with any of this family of tropical herbs, and are as a rule positively injurious to the velvety leaves of Gesneras, to Tydæas, &c.; indeed a dry, rather arid atmosphere suits these plants much better than a moisture laden one.

As basket plants for summer flowering Achimenes are excelled by few others, and by none having the same colours in their flowers. They succeed in the ordinary greenhouse after June is out, and in the southern parts of the country can be employed in open verandahs and balconies. Those which lend themselves to basket culture the more readily are such as possess long trailing stems as A. longiflora, A. l. alba, and A. patens, A. Rollissoni, a cross between A. gloxiniæflora and A. Scheeri and A. Gibsoni. Several varieties are of more stocky growth and are in consequence well adapted for cultivation in pots and pans, being supported by means of thin twigs and sticks. All the species may be rendered bushy in habit by having the points of the growths nipped out once or twice during the early season of growth, these points rooting readily in heat if an increase of stock be necessary.

TYDÆAS.—These plants, which inter-cross readily, need much the same sort of treatment as Achimenes in the early stages, and more warmth to flower them successfully. There are now many varieties due to the efforts of Continental hybridists, more especially of M. Roezl, who raised numerous crosses in M. Van Houtte's nursery at Ghent. These plants seem to be dropping out of cultivation in this country, although handsome in flower and foliage, and of easy cultivation. The starting of the stolons is better done at the end of February and in the months of March and April, the method being the same as in the case of Achimenes. *F. M.*

AZARA GILLIESII.

(For Illustration see p. 77.)

THE Azaras are very attractive evergreen shrubs, natives of Chile, and hardy in most parts of England. A. microphylla is remarkable for its leaves, which are of two different sizes on the same branches. A. Gilliesii has larger leaves, not unlike those of a holly. The small yellow flowers are borne in axillary spikes. We are indebted to Messrs. Paul and Son for a specimen. In their nursery at High Beech, the home of many rarities, the plant is quite hardy and is now showing flower. The Azaras are included among the Bixaceæ.

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[*] Bull. 9, U.S. Department of Agriculture, Section of Vegetable Pathology.

[†] See my previous article in this Journal, Oct. 1905; also *Fortnightly Review* for November last.

JOINT RAILWAY AND PARLIAMENTARY COMMITTEE.

The following Copy of a Memorial presented to His Majesty's Ministers in the Cabinet has been sent us for publication :—

Tavistock Hotel,
Covent Garden,
London, W.C.
January 10th, 1906.

WE, the undersigned, representing the Producers and Distributors of Perishable Foods on the above "Joint Railway and Parliamentary Committee," beg to call your attention to the fact that the Industries we represent, although of National importance, are becoming more and more at the mercy of the Railway Companies.

This arises, partly from the Railway Companies acting in concert, as though the Legislature had sanctioned a vast Parliamentary Monopoly or enormous Trust or Combine, partly from the Railway Companies refusing to recognise the enormously increased volume and altered conditions of traffic in our trades, and the necessity for lower rates and increased facilities, and more especially from the gradual nullification of the safeguards the Legislature intended to provide for Traders.

The result of this is, that our industries are crippled in many instances by the increase of rates and the withdrawal of facilities, when lower rates and increased facilities should in justice be given.

We, therefore, ask you to do all in your power to help us to obtain by Act of Parliament, a Tribunal with powers :—

1.—To alter and amend the already out-of-date Classification.
2.—To deal as intended by the Legislature with increases in rates and withdrawal of facilities.
3.—To deal with claims for reductions in rates and increase of facilities.

We ask that the Tribunal be so constituted as to give Traders an inexpensive and practical procedure.

As matters stand now, we are powerless to obtain redress even by fighting the combined Railway Companies of the Kingdom in the Law Courts at enormous cost, and admittedly the time has arrived for new Legislation.

We feel sure you will agree with us that the fostering and development of Home Industries is, at the present moment, a far more vital question than many others that may be brought before you, directly affecting, as it does, the prosperity of the whole Country.

We also claim that better Railway facilities for these trades will materially help to solve the Unemployed question, and by still further increasing the volume of traffic will substantially benefit the revenues of the Railway Companies themselves.

If you can conveniently appoint a time for a Deputation from our Committee to wait on you and lay our views before you, we should esteem it a favour.

(Signed):—Colonel Charles Wigram Long, M.P., D.L., President, The National Fruit Growers' Federation; H. Isaacs, President, The Green Fruit Section, The London Chamber of Commerce; David Rose, President, The National Federation of Meat Traders' Associations, Incorporated; William Cooper, President, the Central Markets' Meat and Poultry Association; P. J. Chirgwin, President, the Federation of Grocers' Associations of the United Kingdom; W. Poupart, President, The Market Gardeners', Nurserymen and Farmers' Association; Stuart H. Low, President, The Horticultural Trades' Association of Great Britain and Ireland; The Hon. and Revd. A. C. Baillie Hamilton, President, the Guernsey Growers' Association; H. Becker, President, The Jersey Growers' Association; E. Rochford, President, The English Grape Growers' Association; Geo. Monro, President, The National Federation of Fruit and Potato Trades' Associations, Incorporated, and of the Joint Railway and Parliamentary Committee.

THE WEATHER AT ROTHAMSTED IN 1905.

According to the meteorological records at the Rothamsted Experiment Station, Hertfordshire, for the year 1905 just past, the year as a whole has shown a temperature slightly above the average of the past twenty-seven years. The only cold months were August, September, October, and November, the two latter being the most unseasonably cold, while the months of February, March, and July were the most unseasonably warm.

The total rainfall for the year 1905 amounts to very nearly 26½ inches, which shows a falling off from the average of the past 52 years at this station of about 1¾ inch. There were no very wet months, March and June showing the greatest excess, while October and December recorded the most deficiency. The sun shone brightly throughout the year for a total of 1,579 hours, which is 10 hours less than the average in this neighbourhood for the past twelve years. The sunniest months were May and July, while the greatest deficiency of bright sunshine was experienced in April.

The following table shows the rainfall of each month for the past year at Rothamsted, with the average amount of rainfall for each month of the previous 52 years (1853-1904), and the difference of 1905 above or below the average record :—

Rainfall at Rothamsted, Herts, for each month of the year 1905, the total for the year, the average rainfall of 52 years, 1853-1904, and 1905 above or below the average.

Months.	Rainfall 1905	Average Rainfall of 52 years	1905. Above or below the average (1)
	Inches	Inches	Inches
January ...	1·34	2·38	— 1·04
February	0·95	1·81	— 0·86
March	3·57	1·81	+ 1·76
April	2·22	1·85	0·37
May	1·13	2·22	— 1·09
June	4·05	2·36	+ 1·69
July	1·47	2·58	1·11
August ...	3·46	2·66	+ 0·80
September ...	2·25	2·49	— 0·24
October	1·67	3·12	— 1·45
November	3·23	2·56	+ 0·67
December ...	1·10	2·31	— 1·21
Yearly total	26·44	28·15	— 1·71

(1) The sign in the last column (+) signifies above the average, and the sign (—) below the average.

The rain gauge, which is one-thousandth part of an acre in dimension, stands two feet above the surface of the ground, and is about 420 feet above sea level. The above data shows a total of 26.44 inches of rain for the twelve months of the year 1905, against an average of 28.15 inches, which is 1.71 inch less than the average record for this district extending over a period of 52 years. In other words, the deficiency of rain for the year amounts to 172¾ tons of water on each acre of land, and taking the rainfall for the last four months of the year, there is a falling off of the average for the same period in the last 52 years by 2¼ inches, which is equivalent to a loss in our underground water supply of 50,450 gallons on each acre of land.

The next table shows the mean temperature in the shade for each month of the year 1905, with the excess or deficiency at the Rothamsted Station during the past 27 years, 1878-1904; also the number of hours of bright sunshine recorded for each month in the past year, and the number of hours above or below the average for the past 12 years, 1892-1904. Mean temperature and bright sunshine, at Rothamsted, Herts, for each month of the year 1905 :—

Months	Mean Temperature		Bright Sunshine	
	1905	Above or below Average	1905	Above or below Average
	Degrees	Degrees	Hours	Hours
January	37·4	+ 0·8	84	+ 37
February	41·2	+ 3·0	78	+ 10
March	44·1	+ 3·3	126	+ 14
April	45·6	0	101	— 70
May	51·4	+ 0·2	244	+ 48
June	58·5	+ 1·1	169	— 34
July...	64·2	+ 3·4	265	+ 43
August	58·7	— 1·2	180	— 25
September	54·7	— 1·1	129	— 31
October...	44·5	— 3·5	114	+ 8
November	40·1	— 2·4	60	+ 2
December	39·2	+ 1·5	30	— 13
Yearly mean or total	48·3	+ 0·4	1579	— 10

The mean temperature for the year is 48.3°, or 0.4° above the average record. Seven months gave an excessive amount of warmth, while four months gave a deficiency.

The month of April was neutral, giving exactly the temperature of the past 27 years, viz., 45.6°. There were 66 nights when the minimum temperature fell below the freezing point of water, the aggregate amount of frost for the year being 216°. January recorded 18 nights of frost, with an aggregate record of 102°, November 14 nights with an aggregate amount of frost of 49°, and December 10 nights with 19°. In fact, December was exceptionally dry, calm and warm, with no cold worth mentioning. There was one night of frost in May, which cut down all the Potato haulms to the ground. There was frost in eight months out of the twelve. There was probably an aggregate depth of about 8 inches of snow recorded in this neighbourhood throughout the year. The bright sunshine was in excess from the average record during seven months, and under the average for the other five months. The sun shone on an average about 4 hours 19 minutes each day throughout the year, which is a few minutes per day below the average record for this open country district. *J. J. Willis, Harpenden.*

KEW NOTES.

Jacobinia Penrhosiensis ×.

When first exhibited some 50 or 60 years ago, this garden hybrid was of more botanical interest than it is to-day. At that time the two parents were known under different generic names, so that the hybrid was considered to be a bigeneric one. It was obtained by crossing Libonia floribunda with Sericographis Ghiesbreghtiana. Modern botanists having included the two parents in the same genus Jacobinia, the hybrid is now of less scientific interest. Several years after it was exhibited under the name of Libonia penrhosiensis, M. Linden made the same cross, and not being aware of its previous introduction gave it the name of Sericobonia ignea, a name indicating its generic origin. He withdrew his name on learning of the earlier one, but even now it is more generally known on the Continent by Linden's name.

The plant is more robust than the seed-bearing parent, the leaves are larger, the corolla of the flower longer and brighter in colour, there being a greater preponderance of red in proportion to the yellow, showing distinctly the influence of the pollen parent.

As a plant for greenhouse decoration in winter it is very useful. It may be readily propagated by cuttings inserted in spring, and old plants may be cut back after flowering and grown on, affording them a little extra heat until new growth has been made. In a few years by this method good bushes may be obtained. Plenty of fresh air and sunlight are necessary to ripen the wood for flowering in the following season. A small group of plants have been flowering in No. 4 greenhouse. *A. O.*

Interesting Orchids in Flower.

Amongst the numerous well-known species of Orchids now flowering are many that are less well-known, some of which are very beautiful, and others that are of exceptional interest. None more so, perhaps, than Dendrobium capituliflorum, which is very distinct from the typical Dendrobium. It is a species from New Guinea, with a growth about a foot in length, rather stout at the base, tapering to the apex; the flowers are borne in dense globular heads, containing about 20 small creamy-white blossoms. The Burmese D. luteolum is also worthy of note; the large pale-yellow blooms are very pleasing. Tainea viridi-fusca attracts attention with its erect spike of yellow-brown Dendrobium-like flowers. One of the most charming hybrids now in flower is Lælio-Cattleya Lydia of a delightful shade of pale-yellow colour. Amongst the Masdevallias, the hybrid M. Rushtoni is one of the best. M. abbreviata and M. polysticta are very charming with their numerous small white-speckled flowers. Seraphyta multiflora and Octadermia serratifolia represent two genera that are rarely seen. Mystacidium (Angræcum) sesquipedale is represented by a good specimen carrying seven of its remarkable large white waxy flowers. Phalænopsis rosea, P. gloriosa, P. denticulata, and P. Luddemanniana are amongst the species of this beautiful genus, now in flower. Saccolabium bellinum is a species which excites the admiration of all; a healthy little specimen is now carrying ten blooms. Vanda Watsoni is a pretty little species with slender, terete leaves and pure white flowers, having a large fringed lip. It was recently introduced from Annam by Messrs. Sander & Sons. The elegant Epidendrum Endresii has three growths, with a total of 36 flowers. It is undoubtedly the pearl of the genus, and all too rare. E. Wallisii is also very fine, with a tall, stout growth, having nine clusters of blossoms. E. polybulbon is a pretty and distinct species with Bulbophyllum-like growths. The flowers are about 1 inch in diameter, linear sepals and petals, and a pure white cordate-shaped lip. E. Allemanii belongs to the E. fragrans type, and has white, vanilla-scented blooms of good substance, lasting for a considerable time in a fresh condition. Cynorchis compacta is a pretty little terrestial Orchid from South Africa, with erect spikes of violet-spotted white flowers. Small pans of a dozen flowering growths are a welcome addition in the cool house at this season. C. Lowiana is a larger growing species from Madagascar, having a prominent magenta-coloured lip. Xylobium corrugatum is a curious small-growing Orchid, with slender, erect scapes, bearing usually four rather small yellow-red flowers. Pleurothallis Roezlii is now very fine, and is without doubt the best of the large genus to which it belongs. Brassavola Martiana is a free-flowered species with a prettily fringed lip. Listrostachys hamata is a very distinct species, having a short spike of large pearly-white flowers, in which the sepals, petals and the lip are exactly alike in shape, giving the flower a "regular" appearance. The very rare Odontoglossum retusum is represented by a small plant bearing two erect spikes; it is a small bulbed species with long, narrow leaves. The flowers are rather smaller than those of O. Edwardi, and are of an orange-red shade of colour. *W. H.*

FRUIT REGISTER.

APPLE CHARLES ROSS.

Now that many gardens contain trees of this variety of a fruiting size growers will be able to judge of its merits. From five small pyramid-shaped trees grafted on the Paradise stock I gathered last season some 50 very fine quality fruits of excellent flavour, but of much too large a size for dessert purposes. I think the Fruit Committee of the Royal Horticultural Society would do well to class this variety with Blenheim Pippin, Gascoyne's Seedling, and other varieties of that type, in order that it may be exhibited both as a culinary and a dessert variety at the autumn exhibitions. It is doubtless a very fine Apple and well worthy to perpetuate the name of the veteran fruit grower who raised it. I am forwarding two fruits. *Chas Page, Dropmore Gardens, Bucks.*

[The fruits were exceedingly handsome, but they possessed no flavour, and the flesh was dry and mealy. They had undoubtedly been kept too late in the season ED.]

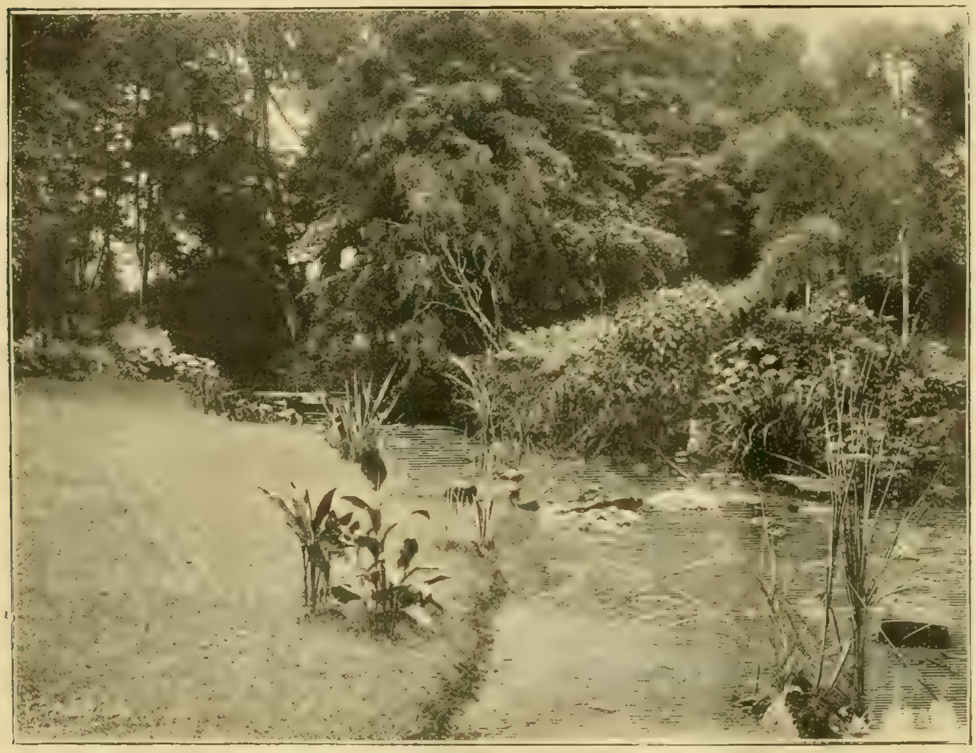


FIG. 34.—LOCKINGE PARK: A GLIMPSE OF A STREAM IN THE PLEASURE GROUNDS.

(See page 67. From a photograph by W. J. Vasey, Abingdon.)

FORESTRY.

CLIMATE AND FORESTRY.

FOR me, who have had to do with the question of naturalisation of exotic forest trees during the last quarter of a century, there can be no doubt as to there being a great difference between our climate and that of the British Isles; but it turns out to be quite in favour of the latter. And so I can only corroborate Sir Herbert Maxwell's statement, as well as that of Dr. Augustine Henry's, published in the *Gardeners' Chronicle*.

Let me add a few words. A good many of the north-west Conifers, as for instance the Douglas Fir, grow in a most remarkable way with us—better than our own indigenous trees—but this is because the geographical range of this tree is so very large. It extends, according to Professor Sargent, over 30 degrees of latitude.

But to give in a few words the principal difference between the English climate and our own (and that in these cases it is not a matter of soil, but solely one of climate) I may state that you will never see in Germany such splendid avenues of Cedrus deodara and Araucaria imbricata as those at Bicton and Dropmore, nor such specimens of Taxodium sempervirens and the Mexican Conifers as Pinus Hartwegi, nor the beautiful Abies morinda. I could easily make up a list of 100 plants, trees, and shrubs which grow luxuriantly in England and which will never stand our Continental climate. I know the British Isles pretty well and the wonderful growth of trees in those islands. There is nothing on the Continent to be compared with the growth of trees in England. *John Booth, Corresponding Member of the R.H.S., Gross-Lichterfelde, near Berlin.*

THE ROSARY.

ROSARIUM.

WE have before us the first number for the year of a journal devoted to Rose Culture and to the interest of the society known as "Nos jungunt Rosæ" (Roses unite us all). The title of the society is, as is customary in Holland, expressive of its aims and objects. The editorship is confided to Mr. P. L. Baudet, of De Bilk, and Mr. J. K. Budde, of Utrecht, whilst the publisher is M. E. E. M. I. Kromme, Hartingstraat No. 24, Utrecht. The subscription price for foreign countries is 3 florins (5 shillings).

The Rose exhibition is to be held at Zeist on July 25 and 26. A photographic illustration of Rose Souvenir de Jean Ketten H. T. is given with the present issue. The text is in Dutch. What matter? "Nos jungunt Rosæ."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

NICOTIANA SANDERÆ. This proves to be a valuable plant for flowering in the winter months. Some plants that were late in commencing to flower were lifted about the middle of October and put into pots. They were given a little care and attention, and soon recovered from the check. They have flowered ever since, and at the present date, January 6, they are still in full bloom and likely to continue so for some time to come. The plants have been kept in an atmosphere of the temperature of 45° to 55°. Air has been admitted to the structure whenever the weather was favourable. The colour of the type is useful in winter, when bright flowers are none too plentiful. The colour improves under artificial light, and the plants have a light and graceful appearance when used for the decoration of the dinner table. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

CLEANSING HARDY FRUIT TREES.—Owing to the exceptionally mild weather experienced this season, fruit buds of all kinds are in a very forward condition, making it imperative that all cleansing operations should be taken in hand forthwith. In many gardens and fruit-orchards one still sees trees infested with moss and lichen, which form a hiding place for all kinds of insect pests. No better winter-dressing for fruit trees can be applied than the caustic soda and pearl-ash wash, which substance can now be obtained from the horticultural sundriesmen in tins ready for mixing, and with instructions for using. Persons desirous of mixing the components themselves can use the following quantities with safety:—1 lb. caustic soda, $\frac{3}{4}$ lb. of pearl-ash, 10 oz. of soft soap, and 10 gall. of water, the last-named at a temperature of 120°. This mixture will destroy all insect pests with which it comes in contact. I strongly urge all fruit-growers in whose plantations winter moth and scale insects are troublesome to use alkali dressing at the present time, as the benefit of the labour entailed now will be apparent in the coming summer. It may be necessary in the case of trees on which the woolly aphis, American blight, has obtained a footing to dress the affected parts two or three times at intervals of a week, working the solution well in with a stiff painter's-brush. Rubber gloves must

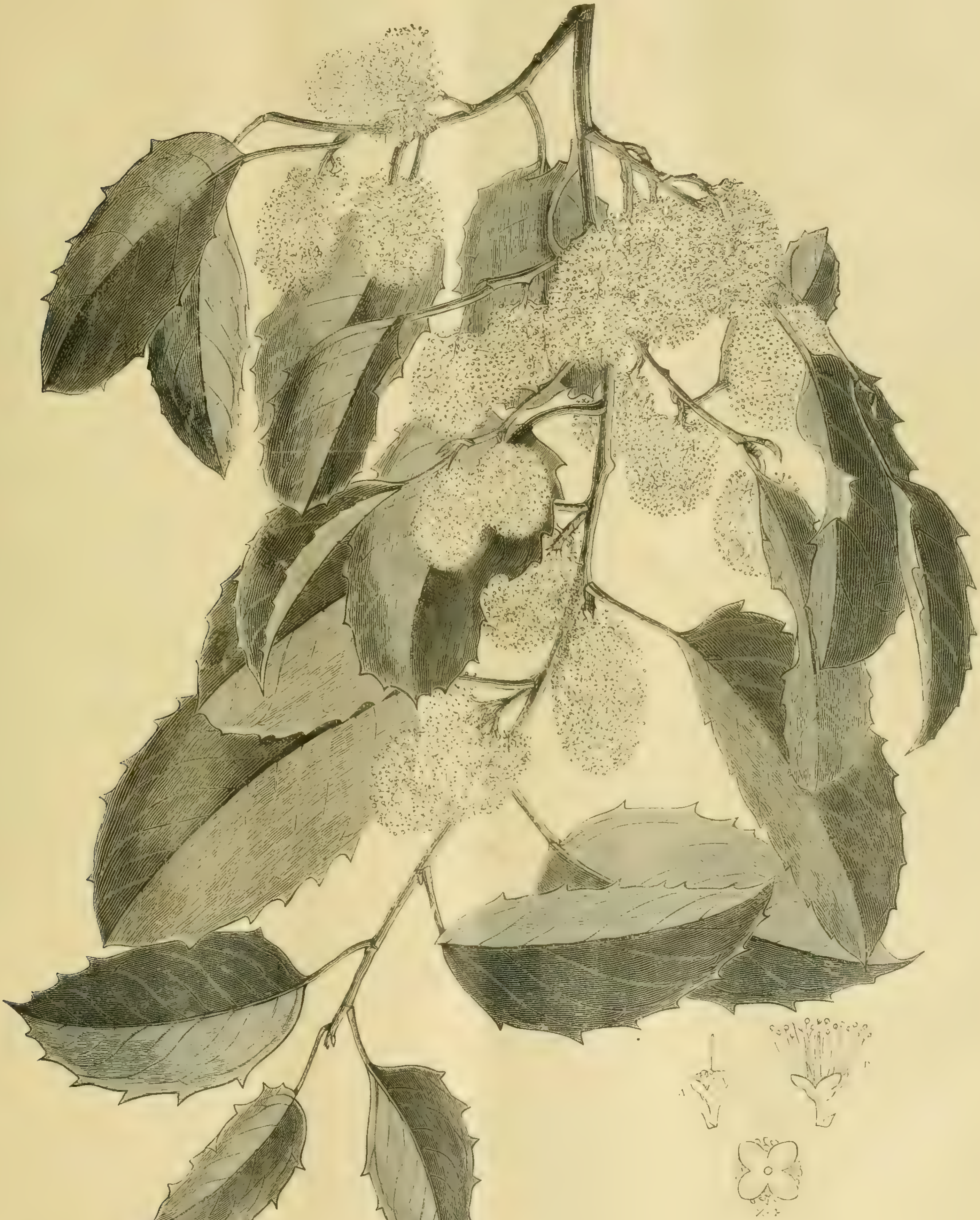


FIG. 35.—AZARA GILLIESII: A, YOUNG FLOWER FROM THE SIDE; B, FLOWER FURTHER EXPANDED; C, COROLLA FROM BELOW (MAGN.).

be worn by the operator to protect the hands, as the mixture is very caustic, and the use of an old coat and a sack apron are recommended. The Abol syringe is an excellent tool for applying the mixture to dwarf trees, but for standard trees a garden engine should be used, choosing a still day for the operation. *C. Page, Dropmore Gardens, Bucks.*

The Herb Garden.—In order to make certain of a continuous supply of herbs, a plantation should be made of all varieties that are likely to be required. These should be properly labelled so that there will be no excuse for anyone making a mistake in gathering a particular herb. Many of the species can be divided in the same way that herbaceous plants are treated in order to form fresh stock. The ground should first of all be trenched and given an application of manure. More often than not, some out of the way spot is selected for herbs, and they afterwards suffer neglect, but a good herb border should be an interesting feature of any garden. Seed may be sown later, of all varieties, and especially of such sorts as sage, &c., that cannot be divided. There is no hurry to sow just yet. *Jas. Gibson, Welbeck Gardens, Worksop.*

Show of Flowering Carnations.—With reference to previous correspondence on this subject may I say that February 13 has been fixed by the Council of the Royal Horticultural Society for this show? Three classes of exhibits have been suggested, viz., those occupying 5, 15 and 30 feet of tabling respectively, thus providing for the requirements of small, medium and large growers. Exhibits, which may be either Tree Carnations, or Malmaisons, or both, may consist of cut bloom, plants, or both together, with Carnation foliage, or other small foliage plants, The Council will grant medals, etc., to any of the groups, classes or exhibits which they may think worthy of that distinction. They will also give certificates to blooms of new varieties of Tree Carnations or Malmaisons, of sufficient merit "not yet in Commerce." Not fewer than six blooms to form an exhibit. Notification of intention to exhibit and of space required should be sent on or before Thursday, February 8, to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W. *Hayward Mathias, Thames Ditton, Surrey. January 19, 1906.*

Fifteen Pounds Annual Rent per Acre from Timber Crops.—It is curious reading the opinions of doubters about the unsuitableness of our climate for growing timber with such certified examples to be seen as that furnished by Dr. Nisbet, in his recently published *Forester*, regarding the Douglas Fir at Scone. It is stated that a Perth timber merchant offered to buy the whole Taymount plantation at £200 per acre when the trees were 40 years old from seed; and that from 1888 up till quite lately the annual increment alone, per acre, amounted to 400 cubic feet of timber—merchant's trunk measure—worth £15 per acre at 9d. only per foot. I would like to hear of a regular rent like this from any other crop in any climate. *J. Simpson.*

Iris tuberosa.—When I was a boy living in Devonshire I grew this well in a shaded and sheltered situation. I have it now in this garden in a somewhat similar condition, but much the oldest group is in a wood, greatly overrun with ivy and shaded by trees. I have known this group for more than 60 years, and it must then have been there many years. The plant evidently requires shade, shelter, and good loam to succeed well. This delicate and interesting plant is not, however, a very free bloomer. *W. S. L. Pinwill, Trehane Probes, Cornwall, January 29.*

Early Spring or Late Autumn?—At present Rosehill garden at Falmouth has, in addition to the ordinary spring plants, the following in flower in the open air:—Acacia dealbata, A. longifolia and A. lophantha, Abutilons megapotamicum, Boule de Neige, Crusader, and Prince of Wales; Auricula, Anemone, Berberis Darwinii, Camellias, Chrysanthemums, Chionodoxa sardensis and C. Luciliæ, Clematis balearica, Cyclamens coum, ibericum and persicum; Daphne vera indica, Desfontainea spinosa, Diosma ericoides, Diplacus glutinosus, Eccremocarpus scaber, Erica carnea, E. codonodes; Erysimum, Erigeron, Eryngium pandanifolium, Eupatorium micranthum, Everlastings, Fuchsias, Fragaria indica, Geraniums, Grevillea rosmarinifolia, Hydrangeas and Hellebores in variety, Iberis sempervirens, Iris stylosa and I. reticulata, Lithospermum prostratum, Musa japonica (Banana), five plants in flower and fruit; Melianthus major, Marigold, Marguerites, Nasturtiums, Narcissus, Nicotiana Sanderæ, Olearia Gunniana Omphalodes verna, Polyanthus, Pansies, Pittosporum Tobira, Roses in variety, Schizostylis coccinea, Spiræa ericoides, Squills, Stocks, Saxifraga crassifolia, Skimmia japonica, Sparmannia Africana, Senecio grandifolius 8 feet high, with flower heads from 12 to 18 inches in diameter, S. Petasites, Thalictrum, Triteleia uniflora, Tritoma, Vinca, Wallflowers and Yuccas. The following have been in flower all the year round:—Cestrum (Habrothamnus) fasciculatum, Coronilla glauca, Escallonias, Genistas, Teucrium fruticans and Veronicas. *Howard Fox, January 27, 1906.*

Plants for Association with Rhododendrons, &c.—I have found the Iceland Poppy (Papaver nudicaule) one of the best plants for this purpose, especially in the case of newly-planted narrow beds or borders in which the Rhododendrons have a clear stem of 1½ to 2 feet in length. The Shirley Poppy is also suitable, but this plant will not succeed in the shade, and is more likely to be affected by drip from the Rhododendrons after rain than are Iceland Poppies. For larger beds giant annual Poppies can be used. Salpiglossis is also very useful, and makes an effective combination. Tree Lupins, providing the soil is a loam and of not too light a nature, are in some cases very good subjects for planting in beds of Rhododendrons. Iceland Poppies and Salpiglossis should be raised in early springtime, and be planted out when the general bedding work is undertaken. Sow the giant Poppies where they are intended to flower. Tree Lupins transplant much better from pots than from a seed bed. *C. Ruse, Munden Gardens, Watford.*

The Planting of Vines.—Vines intended for planting should be dealt with as soon as they show signs of growth. Carefully remove all the soil from their roots by washing them in tepid water. Make the holes intended for their reception wide enough to allow of the roots being spread in a horizontal position from the stem, placing them so that the topmost roots are just below the surface of the ground. When an inside as well as an outside border exists place most of the roots in the direction of the inside border. Water will, as a rule, not be required until the vines are growing freely, neither should any artificial heat be given until the young growths are at least 1 foot in length. The vines should not be cut back, and all the buds should be allowed to break into growth. Select the strongest "break" for the leading shoot and pinch out all above it, but preserve all shoots below the leader. When the auxiliary growths develop eight leaves they should be stopped. Most of the growths below the wires will need securing to sticks placed in the border. Plenteous side growths will not be detrimental, but, on the other hand, will be a material aid in strengthening the stem, for abundance of healthy, exposed foliage means plenty of roots, and consequently a strong and healthy vine. As the season advances admit, in fine weather, plenty of outside air. Remove all bunches of fruit that appear, and in warm weather syringe the vines and close the house about 4.30 p.m. that the atmosphere of the vinery may remain damp during the night. When all the leaves have fallen prune the side shoots close to the stem, leaving the rod, if strong and well ripened, some 6 or 8 feet in length, but should it be weak cut back to a good plump bud. After being pruned tie the vines in a horizontal position, and allow them to remain in that position until the following spring. *C. Ruse, Munden Gardens, Watford.*

Early Flowers.—In the American Garden here that bright coloured Rhododendron Nobleanum is now in full bloom, and is a charming sight. R. præcox, that delightful little hybrid between R. ciliatum and R. dauricum, of rosy purple colour is opening its flowers, and in one or two extra warm spots has been in flower for several days; it makes a very charming bush from 2 to 3 feet in height, and is well adapted for cultivation in warm positions in the S.W. counties. If it is necessary, the plants may be easily protected, by means of a few stakes stuck in the ground in tripod fashion, and a mat or piece of stout tiffany wrapt around them at night. Primrose Miss Massey, bright red, has been in flower in the Alpine garden for some time past—as have several other white and purple varieties. Iris stylosa is flowering very freely, and Narcissus minimus is giving a touch of colour. Erica carnea and alba are also flowering freely; while towering above them is the lovely Erica codonodes—plants of these, 6 feet in height, are beautiful and well worth the notice of all lovers of out-door gardening. Grevillia rosmarinifolia has been in flower for a considerable time, its pretty red flowers are very attractive, and it is now a conspicuous figure in the American Garden. Chimonanthus fragrans has been perfect this season. Jasminum nudiflorum, with its pretty yellow flower, is charming upon walls and growing around trees and over other bushes. Anemone blanda is flowering freely. *W. A. Cook, Leonardslee Gardens, Horsham. January 27.*

Canker in Apple Trees.—The variety Ribston Pippin is liable to this disease no matter what the locality, or the kind of soil the trees are growing in, but the conditions are much worse where the roots of the trees come into contact with an unsuitable subsoil, or if there is only imperfect drainage. All badly affected shoots or branches should be cut clean out, but slight attacks may have the cankered portion removed with a sharp knife or chisel and the wound be painted over with Stockholm tar, keeping it away from the bark as much as possible. We use this tar for all Conifers when a branch of any size has to be removed, and the bark quickly begins to heal over. Out of about 60 varieties of Apples grown here only four exhibit signs of canker, namely, Devonshire Quarrenden, Bismarck, Gascoyne's Scarlet Seedling, and Ribston Pippin. *J. Mayne, Bicton.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

January 23.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair); Messrs. Massee, Saunders, Gordon, Bowles, Michael, Nicholson, Holmes; Rev. W. Wilks; and F. J. Chittenden (Hon. Sec.).

Apples with ring-like split.—Mr. Massee said that the cracks and markings on the surface of the Apples shown by Mr. Spencer Pickering, F.R.S., at the last meeting, were caused by the well-known parasite Fusicladium dendriticum. This fungus, however, was not at all concerned with the abnormal constriction of the fruit.

Clematis stem cracked.—Mr. Massee also reported that in the Clematis stems shown by Mr. G. S. Saunders, F.L.S., there was an excessive development of callus excited by the rupture of the stem. Such rupture is not caused by a fungus, and the origin is not apparent. It was suggested that frost was the cause of the splitting.

Holly leaves blistered.—Some Holly leaves with the well-known disfigurement of blisters were received from Milverton, N.B., upon which Mr. Saunders reported as follows: "The coloured blotches on the leaves are caused by the grubs of the Holly fly (Phytomyza aquifolia), a very common insect, which lays its eggs just underneath the skin of the leaf. The young grubs at once begin to feed on the inner substance of the leaf, and cause the blister-like blotches. When the grubs become chrysalides their heads are partly pushed through the skin, so that when the fly emerges it at once does so into the open air. It is almost impossible to recommend any remedy, no insecticides can be made to reach the grubs or chrysalides, and it is a hopeless task to try to catch the flies. Spraying the leaves with a solution of paraffin emulsion at the time when the flies were wishing to lay their eggs would probably deter them from doing so. This operation is performed in May or June, according to the season, and it is very difficult to know when to spray. Picking off and burning the infested leaves is the most practical remedy. The minute pustules and depressions which are present on many of the leaves are not caused by this insect." Members of the committee considered that the small depressions were due to the puncturing of the leaves by the spines of other leaves in windy weather.

Beans poisonous.—Mr. Holmes, referring to the cases of poisoning by roots of Runner Beans, recently brought to the notice of the committee, mentioned a case where a herd of 26 cattle had been poisoned by beanmeal, and said that it could not be too widely known that uncooked beans of the genus Phaseolus contained prussic acid, and should on no account be eaten.

Plants Exhibited.

Debregeasia velutina.—Dr. Masters drew attention to a fruiting shoot of this plant shown by Messrs. Veitch. The plant is a native of the Himalayas, and bears numerous small orange yellow Mulberry-like fruits in small clusters. The plant belongs to the Urticaceæ, and the fruits are edible, but "are not much appreciated." It was figured in the *Revue Horticole*, 1896, p. 321.

Hæmanthus magnificus.—This plant, with a large head of pinkish flowers, was shown by Mr. Hudson.

Tulip Proserpine.—Mr. Horne, of Thurstaston, near Birkenhead, sent two examples of this Tulip, each of which bore three flowers, one, as usual, terminal, and one springing from the axil of each of the upper two foliage leaves. The production of more than one flower on a stem of Tulip is not very unusual.

MANCHESTER & NORTH OF ENGLAND ORCHID.

January 11.—There was a good display of plants at the meeting held on the above date.

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), staged a nice collection of Lælia anceps, in variety. Noticeable among these were L. a. var. Ballantineana, L. a. var. grandiflora Chamberlain's variety, L. a. var. Schröderiana, and L. a. Bull's alba. (Silver Medal.)

A. Warburton, Esq., Haslingden (gr. Mr. Raven), exhibited several good Cypripediums. C. × Germain Opoix was one of the best, and received an Award of Merit; C. × Victor, and a distinct form of C. × aureum were also noted. (Vote of thanks.)

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), sent some good plants, amongst which were Cypripedium × Winston Churchill, a supposed hybrid between C. insigne × C. Sallieri var. Hyeanum. (First Class Certificate.) Cypripedium × luminosum, from the same owner, received an Award of Merit.

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), staged some good Cypripediums, viz., C. × Kitty, C. × Ajax, and C. × Lathamianum, Wrigley's variety, each of which obtained an Award of Merit. (Vote of thanks for group.)

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), obtained an Award of Merit for Cypripedium × Edmond Lord, and a Silver Gilt Medal for a very nice group, principally of Cypripediums.

Messrs. Charlesworth & Co., Bradford, staged a charming group of plants, consisting of good Odontoglossums, Cypripediums and Lælio-Cattleyas, Brasso-Lælia "Mrs. Gratrix var. magnifica" was given an Award of Merit, a similar award being voted for Lælio-Cattleya × Wellsiana.

Vote of thanks were awarded to Messrs. Stanley & Co., D. McLeod, M. Ch. Vuylsteke, H. Low & Co., and Keeling & Sons for exhibits. *P. W.*

January 25.—A capital exhibition was made on the above date.

A group was contributed by Messrs. Cypher & Sons, of Cheltenham, to which a Silver Gilt Medal was awarded. Cypripedium × Charlesianum Cypher's variety was one of the best in this group, but was not shown for Certificate; C. × villexul, a cross between C. villosum × C. exul, obtained an Award of Merit.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), obtained a Silver Medal for a group of Cypripediums and Odontoglossums, and an Award of Merit for Cypripedium × Euryades Low's variety.

Messrs. Charlesworth & Co., Bradford, were awarded a Bronze Medal for a small and very select group of Lælio-Cattleya hybrids and Odontoglossoms.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), obtained Awards of Merit for two good Cypripediums, viz., C. × Rex and C. × Headlandianum, the latter a richly-coloured flower of great size.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), obtained a First Class Certificate for Cypripedium × Mrs. Mostyn Chardwar variety, and C. × Watsonianum. C. × Germain Opoix was also shown.

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), exhibited Cattleya Trianæi var. Harefield Goliath, a wonderfully fine form. (Award of Merit.)

M. Ch. Vuylsteke, Ghent, obtained a Silver Medal for a choice lot of Odontoglossum hybrids, including some very distinct forms of O. × ardentissimum, also O. × Wiganianum, a choice hybrid which obtained an Award of Merit.

Messrs. Low & Co., Enfield, obtained an Award of Merit for Cypripedium Venus Low's variety.

Messrs. H. J. Craven and Messrs. Keeling & Sons received votes of thanks for exhibits. *P. W.*

SOCIETE ROYALE LINNEENNE ET DE FLORE, BRUSSELS.

January 21.—The first meeting, held on this date, by the conjoint Societies of Brussels, the Linnéenne and the Flore, was an unequivocal success.

Two hundred and thirty-one plants were exhibited. The jury awarded four diplomas of honour, 58 certificates, and 23 commendations. The jury was divided into four sections.

The principal awards on this occasion were made to Orchids from MM. Lambeaux, Vuylsteke, J. Hye de Crom, Duchesne, Lanthonie, Putzeys, Pauwels, Draps-Dom, Van de Putte, Madame Madoux, and others.

Botanical certificates were awarded to Habenaria procera, a species from the Congo, flowering for the first time in Belgium, and to Satyrium odorum from the Brussels Botanic Garden.

Chinese Primroses, Cyclamens, were shown, as well as Anthurium Rothschildianum Pteris metallica, Hymenodium crinitum, Eugenia myriophylla, Selaginella Africana, and Codiæum "Norman MacLeod," which all received recognition, as did also a collection of Pears, including Olivier de Serres, Besi de Chaumontel, Beurré Rance, Passe Crassane, Josephine de Malines, Bergamot Espèren, besides others less familiar to English readers.

The next meeting will be held in the Forestry Museum of the Brussels Botanic Gardens on February 18.

IRISH GARDENERS' BENEVOLENT.

January 25.—The members of the above society held their annual meeting on the above date, Mr. F. W. Moore, A.L.S., presiding over a good attendance. The annual report stated that the year 1905 would rank as one of the most successful experienced. The amount paid out in benefit (£30) was the largest on record; yet by economy of working expenses the balance showed a substantial increase. Numerous papers on gardening topics were read during the year, including those by Mr. Houston, of the Department of Agriculture. The members also enjoyed some profitable outings. The accounts showed a balance on hand of over £141, as against £121 the previous year. On the motion of the chairman, seconded by Mr. Longmuir, the report was unanimously adopted, after which Mr. Moore delivered a lecture on Palms.

BRITISH GARDENERS' ASSOCIATION.

At a recent meeting of the Ealing Gardeners' Mutual Improvement Society, Mr. J. Weathers, secretary of the British Gardeners' Association, delivered an address to the members upon the aims and objects of this association.

Mr. Weathers said one of the main objects of the association was to persuade all trained gardeners in the United Kingdom to unite into one strong association instead of remaining as powerless units isolated from each other all over the country.

Although the association had been instrumental in filling situations, Mr. Weathers maintained that, if the association only succeeded in weeding out from the ranks of the gardening profession all those who had no claim whatever to the title of gardener, it would have accomplished a work that would confer a lasting benefit upon real gardeners throughout the length and breadth of the land.

The question of wages and hours of labour were at present not of such paramount importance, and any attempt to make them the cardinal points in the association's programme would be likely to result in disaster. There would be a natural, and almost automatic, improvement in these directions in the course of time when trained gardeners of all grades agreed to work together for the common good.

No one could possibly object to gardeners uniting into combination for the protection of their common rights in the same way as doctors, lawyers, teachers, and members of many other professions.

Indeed, employers, and the public generally, should look upon the British Gardeners' Association as their best friend. At present hundreds of gardens were being ruined because the owners had no means of knowing whether the men they employed were really qualified gardeners or not. Even the person who employs a jobbing gardener one or two days a week should ascertain whether the man employed understands his business, otherwise, as is at present often the case, the ignorant individual who poses as a gardener will do as much mischief in half an hour as a bull would do in a china shop in the same time.

Eventually it was decided to form a branch of the association at Ealing, the members to decide upon a secretary at their next meeting.

GARDENERS' DEBATING SOCIETIES.

BIRMINGHAM AND MIDLAND COUNTIES GARDENERS' MUTUAL IMPROVEMENT.—The annual meeting of the above association was held at the Athletic Institute, John Bright Street, Birmingham, on Monday, January 15, when the balance sheet was presented and the committee for the present year elected; it was also decided to hold a social gathering at the Colonnade Hotel, New Street, on February 21, to celebrate the 20th anniversary of the association. The balance sheet showed that the expenses for the year amounted to £68 4s. 2d., and the receipts to £56 9s. 8d. The assets amount to £306 15s. 4d. and include the Guthrie Investment £274 11s. 9d. Books in library are valued at £76 5s. 1d., etc., etc. The show of early Chrysanthemums was successful, and being helped by donations and a contribution from the general account of £2 19s. 6d. the expenses were covered. The following papers will be read during the present sessions: February 12—"The Primula." Mr. C. H. Herbert, The Nurseries, Hazelwood Road, Acocks Green; February 26—Discussion on the advisability of holding a Summer Excursion and Question Night; March 12—"The Dahlia." Mr. G. W. Kerr Manager to Messrs. Baker & Sons, Old Hall Nurseries, Codsall; March 26—"Alpine Plants." Mr. R. Cock, F.R.H.S. Horticultural Lecturer to the Staffordshire County Council; April 9—"The Carnation." Mr. W. H. Parton, Kingswood Grange, Hollywood; April 23—"The Pruning of Hardy Trees." Mr. E. Burden, The Nurseries, Billesley Lane, King's Heath. An Early Flowering Chrysanthemum and Dahlia Show will be held at the Botanical Gardens, on October 3 and 4. Schedules will be sent out in due course.

BOURNEMOUTH GARDENERS'.—At the meeting of the above Society, held on Tuesday, January 16th, at the Avenue Restaurant, Bournemouth, Mr. C. Nippard in the chair, Mr. J. Stevenson, Gardener to the Duke of Hamilton, Wimborne, gave a lecture entitled "Some Notes on Peas." The lecturer gave the results obtained from different varieties, and demonstrated the value of an intelligent selection of sorts best suited for particular localities. Mr. Stevenson exhibited a fine collection of Apples in 18 varieties.

CROYDON AND DISTRICT GARDENERS'.—This society opened their new session on Tuesday, 16th ult., when a paper on "Primulas" was given by Mr. G. Gumbrell, the Lodge Gardens, Widbury, Herts., from which the following extracts are taken. Sow the seed thinly about March and April, or it may be sown in August, and covered with sand or finely sifted soil. Place the seed pans in a temperature of 55 to 65 degrees, and cover them with glass to prevent evaporation. Constant care in watering must be exercised at all times. When the seedlings are vigorous place them on a shelf near the glass, and when big enough prick them off into boxes, where they may be allowed to gradually harden off. They may then be planted into 3-inch or 4-inch pots. When good root growth is made remove them into 5-inch or 6-inch pots for flowering, using a mixture of two parts loam, one part leaf soil, one part spent mushroom bed and sand, and a little mortar rubble or charcoal, with the addition of a small quantity of bone meal. A slight sprinkling of water night and morning should be given, and when the plants are well established give abundance of air, whilst protecting them from strong sunshine. Remove the flowering spikes till good root action is made. By the end of September they may be removed to the greenhouse and placed near to the glass, in which position they may be given plenty of ventilation but must not be allowed to experience cold draughts. Double varieties are best propagated from cuttings and should be treated in a similar manner to the seedlings. A good discussion by the members followed.

Close upon a hundred members and friends of the above society assembled at the Greyhound Hotel, Croydon, on Wednesday, 24th ult., on the occasion of the society's sixth annual dinner, which function invariably proves one of the most enjoyable of its kind. The Vice-chairman, Mr. G. J. Ingram, in submitting the toast of "The Society," said:—During the past year they had had 19 meetings, but only two discussions, and had also held a very successful spring show. He congratulated the society upon having a very capable working committee. They were also fortunate in having at their head a gentleman who always took a keen interest in horticultural matters. The secretary and the treasurer also received a word of praise. Mr. Boshier, Hon. Sec., on rising to respond, met with a cordial reception. He asked the members to attend in as large numbers as possible, and so encourage the lecturers and committee in their endeavours to make the society a success. After a good deal of consideration the committee had found it advisable to make provision for a microscope, which could be used at meetings and by the members.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—A meeting of the above society was held on Tuesday, 16th ult.; Mr. W. P. Bound in the chair. A paper on "Vine Culture," written by Mr. C. E. Salter, was read in the writer's absence by his father, Mr. C. J. Salter, of Woodhatch Lodge, Reigate. The paper dealt in an able manner with propagation, pruning, ventilation, and the formation of vine borders. A discussion followed the paper. *F.C.L.*

EGHAM AND DISTRICT GARDENERS'.—At the meeting of this society held on January 17, Mr. A. Sturt in the chair, Mr. W. Swan, of Thornecote Gardens, Staines, read a paper on "Orchids." The essayist described the habits of growth, and the flowering and resting period of many species and varieties of these flowers. He also stated the most suitable temperatures in which to grow them, proper materials for potting and basketing, hints on hybridisation, &c. A discussion followed. A group of Freezias was exhibited by W. A. Stearns. *T. J. W.*

BIRKENHEAD AND DISTRICT HORTICULTURAL. The members of the above association assembled on Thursday, 18th ult., in the Gordon Hall, Birkenhead, when Mr. R. Horne, The Gardens, Dawpool, Cheshire, delivered a lecture on the "Cultivation of Calanthe Veitchii." The lecturer gave full cultural details. He recommended the potting of the pseudo bulbs singly, in 5½-inch pots during the month of March, in a compost of three parts loam, one part moderately dry cow manure, and one part woodash, with charcoal and fine gravel incorporated as the potting proceeds. The plants should be fed with Clay's Fertiliser when the new growths have attained a length of a foot, and be watered occasionally with a solution of Ichthemic Guano. Never syringe the plants with water overhead. Stand the plants on inverted pots over a bed of coal ashes, and shade them when bright sunshine appears. Maintain a temperature of 70° to 80° all through the growing season, and withhold all stimulants from the time the first flowers open. Maintain a drier atmosphere during the flowering period, and also lower the temperature to 58° or 60°. Mr. Horne exhibited well-grown plants of this decorative Orchid. *Herbert May.*

CHESTER PAXTON.—The opening meeting of the present session was held in the Grosvenor Museum, on Saturday, the 20th ult., under the presidency of Mr. Robt. Wakefield. Mr. J. D. Siddall was the lecturer, and he took for his subject "South and West Cornwall." By the aid of lantern slides, prepared from photographs taken by the lecturer himself, and dried specimens of the principal plants, he described in an interesting manner the flora of these districts. The beautiful and rugged scenery of these districts was well portrayed in many of the lantern slides. Amusing anecdotes bearing upon the habits and characteristics of the seafaring population of Cornwall were also related.

CARDIFF GARDENERS'.—The annual dinner of the members of the above society was held at the Sandringham Hotel, St. Mary Street, Cardiff, on Wednesday, 24th inst. Mr. E. H. Battram presided, and a company of about 60 members and friends passed a very enjoyable evening. The function was declared to be the most successful gardeners' dinner ever held in Cardiff. The arrangements were carried out by Mr. John Julian, the Hon. Secretary.

PANGBOURNE & DISTRICT GARDENERS'.—The fortnightly meeting of this association was held on Wednesday, January 24, in the New Hall, Pangbourne. Mr. D. Harris, Mapledurham, presided over a record attendance of members. After the formal business of the association was concluded, the chairman called on Mr. W. E. Dix, Gardener to Sir B. Baker, K.G., Bowden Green, Pangbourne, to read a paper on "Sweet Peas and their Culture." The essayist gave the history of the Sweet Pea, and also the cultural details necessary for the production of good plants and handsome blooms. He also explained the many uses of this popular flower, both in the garden and also for table decoration.

CHELMSFORD & DISTRICT GARDENERS'.—At a recent well attended meeting of the above association an essay on "Deciduous and Evergreen Flowering Shrubs," was read by Mr. Chandler, who dealt exhaustively with the subject, and gave a long list of suitable subjects for planting. *W. C. S.*

At the meeting held on Friday, January 26, before a large gathering of the members, Mr. W. W. Bull read a paper on "Bush Fruits." The essay dealt in a thoroughly practical manner with the propagation, planting, and general culture of these fruit trees. Special reference was made to birds in the orchard.

TRADE NOTICES.

J. W. Moore, Ltd. Mr. W. Mansell (for the last 12 years with Messrs. Charlesworth & Co.) has taken over the management and the principal proportion of the shares of Messrs. J. W. Moore, Ltd., Orchid Importers, Rawdon, nr. Leeds.

SCHEDULES RECEIVED.

Southampton Royal Horticultural Society's Summer Carnation and Autumn Exhibitions to be held on June 27, July 20, and November 6 and 7 respectively.

ENQUIRIES.

What is Pinus Mallettii? Where is it described? It is not in the ordinary lists. *X.*

Loughborough Boiler. — Can any gardener who has been using the Loughborough Boiler give his opinion as to how long a No. 3 size should last? We have had one here in use for nearly nine years, and now it has cracked in several places. I may say the boiler is embedded in cement, which cannot allow gradual contraction. It is suggested the boiler ought to have lasted at least ten years longer. *H. H., Kerry.*

ANSWERS TO CORRESPONDENTS.

*** Editor and Publisher. Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the Publisher; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the Editor. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Books: *W. E. A.* We are unable to tell you what the books you mention would be likely to fetch at a sale. The edition of Miller's Dictionary (the eighth), which you have, is the only one of much value nowadays, as it is the first in which the Linnean system was adopted. We should advise you to consult some second-hand bookseller.

Cymbidium Lowianum: *T. B.* This Orchid is practically a greenhouse plant, and the atmospheric temperature you give as the minimum is in excess of that required. Especially should this cool-house section of Cymbidium be subjected to a lower temperature at night than in the day, and when expanding their blooms a rather dry atmosphere is necessary. The flower spikes you have sent us seem to indicate that the atmosphere of the house containing the plants has been too warm, moist and imperfectly ventilated.

Cymbidium Tracyanum losing Buds: *A. E. B., Gravesend.* Protracted, dull weather, and fogs often cause the loss of flowers in winter in the manner you describe. But your Cymbidium has probably been kept in a too warm and moist atmosphere. See answer to *T. B.*

Flannel Flower of Australia: *J. G. G.* The name might be applied to several genera indigenous to the Colony, and remarkable for possessing tomentum, such as Ammobium, Helipterum, and Helichrysum.

Fruit Trees: *W. P.* If the tenant is a nurseryman or market gardener he may remove them, but otherwise the tenant should not take away or destroy the trees he has planted on the ground. This is, of course, after notice of termination of tenancy has been given by one or the other parties to the contract. Consult a solicitor.

Grubs in Vallota purpurea: *A. J. Bliss.* The specimen you sent is undoubtedly the larva of the Narcissus fly, Merodon narcissi. Your record is interesting, but the larvæ do not confine their attacks to the various species and varieties of Narcissi; they have been found to be destructive to many rare and beautiful Hippeastrum hybrids, &c.

Jasmine: *W. B.* The white Jasmine is a shy flowering plant in many places. Encourage free growth and preserve the long trailing shoots, pruning sufficiently only to admit the necessary light and air. Remove the tree's fastenings in the autumn in order to allow the air and light to circulate freely amongst the shoots, that they may become well ripened. Jasmines require plenty of space over which to ramble at will.

Mendel's Theory: *Correspondent.* It is difficult to compress an account of this theory into the space at our disposal for Answers to Correspondents. Mendel crossed certain varieties (not species), with marked contrasting characters; for instance, smooth skinned Peas and wrinkled seeded Peas. In the first generation the offspring was uniform, the "dominant" character asserting itself over the "recessive," which was latent. On crossing them again, a mixed progeny made its appearance, the "dominant" character appearing in the proportion of three to one of the recessive so that the hybridiser has first to find out what is dominant and what recessive, and then to arrange that the dominant, if that is what he wants, shall assert itself in the proportion of three to one. The dominant character may, under certain conditions, lose its predominance and become recessive and *vice versa*, and so by careful study and experiment hybridisation, instead of being a haphazard procedure, may gradually be regularised and its results obtained with something like numerical precision.

Moss-fibre for Bulbs: *X. Y. Z.* You will probably be able to obtain particulars concerning the cultivation of bulbs in moss-fibre by writing to Mr. R. Sydenham, Seedsman, Tenby Street, Birmingham. We do not know of a book upon roof gardening.

Names of Plants: *C. W. S.* Psidium Cattleyanum, the Guava.—*A. D.* The specimen sent is a form of Cypripedium × Leeanum. It is a form which has reverted towards C. villosum, or it may have a touch of an allied form, but in effect it is as stated above.—*W. K.* 1, Abies bracteata; 2, Juniperus virginiana var.; 3, Abies cephalonica (?); 4, Abies Pinsapo; 5, Abies nobilis; 6, Sequoia sempervirens.

Peach Shoots: *C. B.* The appearance of the shoots shows that the real cause of trouble is the root. Too much water and imperfect drainage. There is no fungus disease present.

Perennial Flowering Plants: *F. F. S.* The following will be found suitable for your purposes: Anemone japonica, Antirrhinums, Michaelmas Daisies, Campanula pyramidalis, Red Valerian, Carnations, Pinks, Doronicum, Lathyrus latifolius, Lupins, Lychnis chalcedonica, Oriental Poppies, Scabiosa caucasica, Trollius europœus, Solidago, Rudbeckias, Sunflowers, Saponaria, Veratrum album, Silene acaulis, and Saxifrages in variety.

Plants Suitable for a North Border: *W. H. N.* Christmas roses, Petasites fragrans, Delphiniums, Aconitum, Agrostemma coronaria, Anemone fulgens, Antirrhinums, Epilobium angustifolium, Snowdrops, Narcissi, and many other bulbous plants, Polemonium cœruleum, Primulas and Polyanthus, Vinca major, Violets, Pyrethrums, Perennial Asters (Michaelmas Daisies), Solidago, Hypericums, Chrysanthemum maximum, Saxifragas, Campanula pyramidalis, Chrysanthemums, &c. The foregoing species are all perennials, but not entirely herbaceous. With regard to the other question you ask, we have not read the pamphlet in question, and can offer no opinion on the subject.

Potatos: *J. B., Carlisle.* You should send your specimens to the Royal Horticultural Garden. Wisley, Surrey, or to the Secretary of the National Potato Society, Postling Vicarage, near Hythe, Kent. To allow tubers to heat or sweat in heaps would no doubt greatly facilitate the growth of the fungus, but such a practice was certainly not the first cause of the Potato disease.

Privet attacked by Grubs: *C. F. M.* The twigs are apparently injured by the larva or caterpillar of a Noctuid moth; but the specimen you sent was dead and shrivelled, therefore we cannot fix the species. If you will forward us living examples we will endeavour to rear the perfect insect.

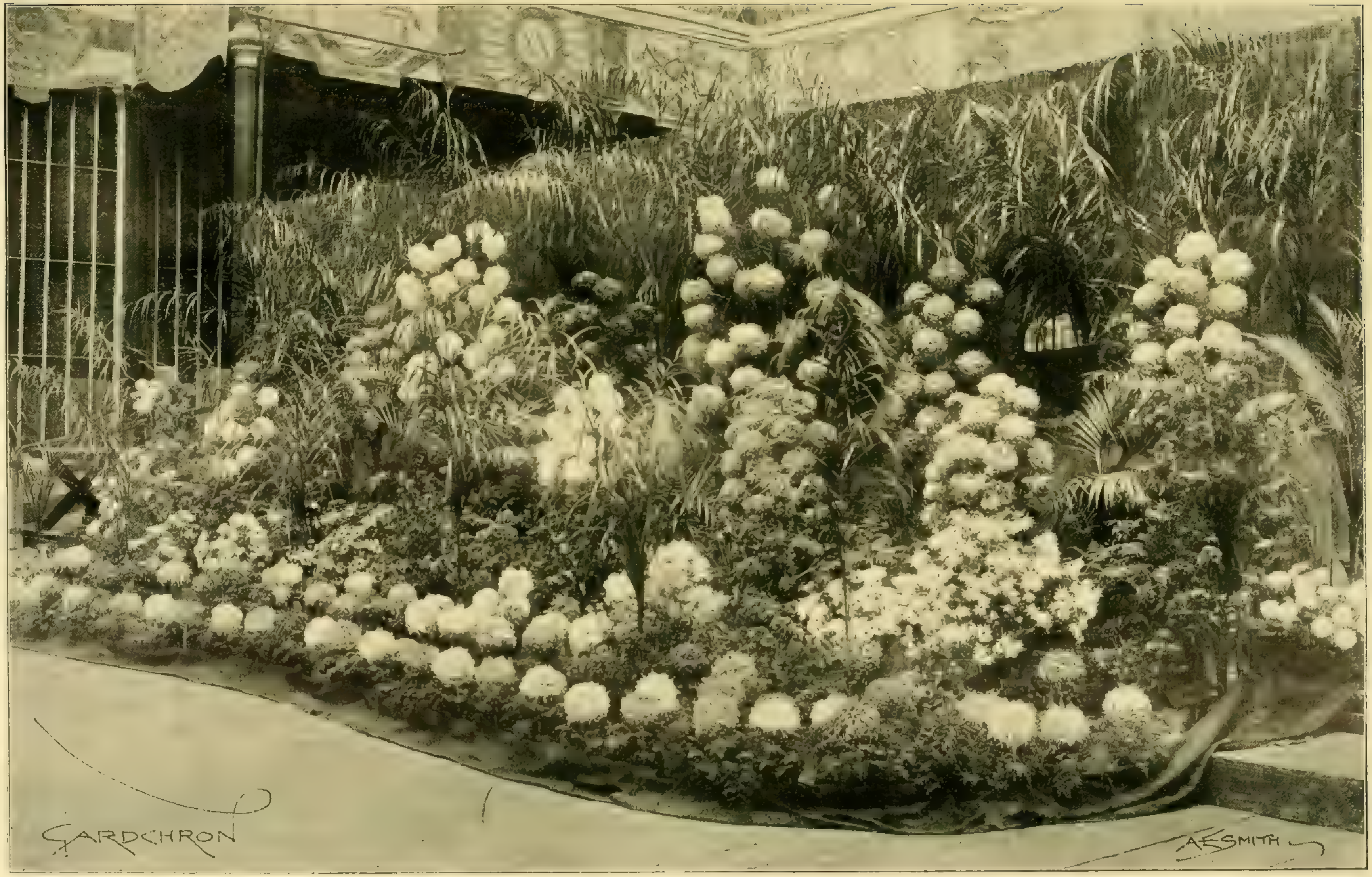
Scale Insects on Palms: *A. W.* Aspidiotus dictyospermi on Kentia Belmoreana. This species is fairly common on various species of Palms in this country. Ischnaspis filiformis, or black-thread scale, on Areca lutescens, together with a few examples of Diaspis boisduvalii. Both insects are common greenhouse pests in this country.

Sedges on Poor Land: *V. F. P.* No. 1 is the creeping underground stem of a species of Carex. The other specimen is a grass—probably a species of Agrostis. Sedges are usually associated with poor, wet land, on which grass will not succeed well. If your land is waterlogged it should be suitably drained, and receive a heavy dressing of farmyard manure in order to encourage the growth of grasses, which will in time crowd out the sedges. Road sweepings, old potting soil, or any similar materials form a valuable top-dressing for poor grass land. Before making the application use the wooden rake freely over the surface, and afterwards drag the grass with a brush-harrow.

Violets Diseased: *W. B.* The plants are attacked by a fungus, Ascochyta violæ. Spray them with a solution of potassium sulphide, using one ounce of this chemical to three gallons of water every fortnight. If the disease is rampant, plant a fresh bed in another part of the garden, using new stock obtained from a healthy bed, but do not neglect to burn all the diseased plants and the surface soil from the ground in which they are growing.

Communications Received.—T. H. C.—C. J.—G. P.—Pink—G. L. H.—J.M., Totnes (Photograph) can you send us a few twigs and an old leaf?—T. C.—C. B.—H. H. T. W. G. B.—Cayeux and Le Clerc—H. L. & Co.—D. A.—J. W.—R. M.—Royal Horticultural Society—F. B.—G. L. H.—J. M.—W. A. C.—J. L.—F. M.—A. B.—J. C., Bagshot—D. R.—E. M.—T. H. C.—W. F.—W. J. T.—A. Y. L.—J. O. C.—E. B.—F. W.—C. B.—Mac.—R. F.

For Market Reports, see page xvi.



A GROUP OF CHRYSANTHEMUMS SHOWN BY MR. H. J. JONES, AT THE NATIONAL CHRYSANTHEMUM SOCIETY'S EXHIBITION AT THE CRYSTAL PALACE IN DECEMBER LAST.

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THE
Gardeners' Chronicle
No. 998.—SATURDAY, February 10, 1906.

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KNIPHOFIAS AND THEIR CULTURE.

RECENT introductions of species of Kniphofia, or Tritoma, as they are more frequently called, and the good products of skilful hybridists who have raised new colour varieties from species already well known, have increased the garden value of this genus. Many of the older species, such as K. Aloides, are undoubtedly coarse plants both in flower, colour and habit of spike—they are plants to be used, massed for distant effect, for the better furnishing of large belts of shrubbery, where flowers are desired, and for kindred uses in the garden landscape, but their utility in the flower garden was never very great.

Kniphofias have kept pace with the improvement manifest in many hardy plants of value for borders, and they can now be had in many fascinating shades of colour, ranging from creamy white through all shades of yellow, apricot, coral, red and crimson, either self-coloured or in the two or three contrasting shades peculiar to the group. In stature they vary from slender, multi-flowered, grassy tufts a foot in height that would grace any rockery, to noble plants that have been rendered still more unfit for small gardens, but which have a grand effect in large borders and in the garden landscape. In the older K. Aloides the plant was far too large, and the stems much too thick for the size of spike; in these newer forms the inflorescence is proportionately much larger, but the greater gain is in the elimination from the newer hybrids of the glaucous grey colouring of the buds of the old species, and in the production of much longer spikes. Forms that are intermediate in stature often give us the refined, shapely inflorescences in sheaves, and here we find the very best border plants in a great variety of new colours such as would astonish one who is accustomed to regard Kniphofias as "red hot pokers."

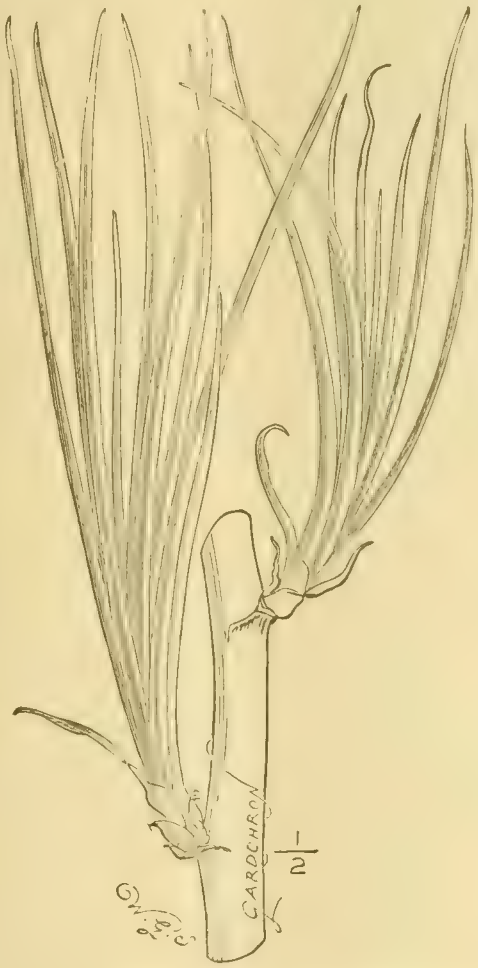

FIG. 36.—SHOWING ADVENTITIOUS BUDS ON THE FLOWER STALK OF A KNIPHOFIA, BY MEANS OF WHICH PROPAGATION MAY SOMETIMES BE EFFECTED.

Practically all the best Kniphofias are quite hardy in Britain, a few of the broad-leaved, Agave-like species are a little tender, and two of the small-flowered grassy species are not hardy; but as the former group has good hardy representatives, and the latter group is of limited garden value, they cannot be considered much loss. In most cases the slender, grassy Kniphofias winter well in a light, well-drained soil, and are not otherwise difficult to manage, but all varieties are benefited by a mulch of strawy manure placed over the roots should frost threaten when newly planted.

Many of the species have well-marked characters that render their identification easy, but with those species that have been in cultivation for some considerable time difficulties arise owing to a natural variation from the given type. Seedlings vary from the parent plant in a remarkable manner, too, and where red-flowered forms and species are grown together, bees and other insects, by interpollination, render it impossible to carry a species through more than one generation without obtaining remarkable variation in the shape and colour of the flowers, as well as in the habit of the plants; detailed descriptions of such plants, therefore, are more an embarrassment than help to the grower who seeks to cultivate an acquaintance with them, and in the following notes on the species and varieties of Kniphofia, the chief characters from the gardener's point of view are dealt with mainly.

Early winter and early spring are the best seasons for moving and planting Kniphofias, and it is preferable in naturally retentive soils to cover the crowns with but 3 inches of soil, or decay may ensue; their own contractile roots will pull the plants deeper into the ground as growth goes on. Firm planting is desirable, and the roots should be spread apart to ensure good anchorage and thus prevent frosts lifting the plants above the ground level and exposing the rootstock. If the plantation is a new one and the plants have to be purchased, only those should be chosen whose leaves and roots are uncut. Many nurserymen still follow the unfortunate practice of trimming the roots and leaves of Kniphofias close to the rootstock, treating the plants as though they were deciduous bulbs—nothing can be more detrimental to the plant's welfare than this. The shortened leaves form a perfect funnel to conduct water to the rootstock in the depth of winter, and the mutilated roots are in a soddened state and quite inactive for months afterwards; the wounds cannot heal, and decay ensues as a matter of course. A well-rooted plant, having plenty of good leaves, can protect itself from excess of wet and thrive where a mutilated stump would quickly die out. I have several times had occasion to condemn this practice, and I have noted with satisfaction that others have entered their protests in these columns from time to time.

All Kniphofias are quite hardy save those species which flower in winter. K. modesta, K. multiflora, and K. longicollis are the least hardy, but these winter well if they are able to perfect their flowers before severe frosts occur. The frost-stricken flower stems decaying to the base cause the plants more harm than that resulting from frosts. One cannot, however, recommend these species for general planting except in the south-western counties. K. Rooperi, K. Northiæ, and K. Leichtlinii are often "hit" badly, but survive and flower freely in dry soils and in naturally warm positions. The hybrid race of garden Kniphofias are generally quite hardy once established, but need covering in cold counties in winter.

SPECIES AND VARIETIES.

K. aloides (Uvaria).—The old-time species, which, in conjunction with K. Burchelli, Leichtlinii, foliosa and Macowani, has given us a host of garden forms of hybrid origin, varying greatly in every detail. The type plant has dark-green leaves in tufts, and stout spikes of flowers 4-6 inches long, the buds of which are of glaucous grey colour, and the developed flowers of dull red, passing to a dingy yellow at the throat as they mature. The spike is only twice as thick as the stem at its base, and the flowers are closely packed together. There are five distinct varieties and these are as follows:—*glaucescens*, a glorified aloides with spreading glaucous foliage two or three yards across, and stout spikes of deep red flowers produced in October; *grandiflora* (longiscapa), the spike of which is massive, the florets distended at the throat and poised at right angles with the stem; the free lobes are very long and reflex fully; colour a deep glowing coral red passing to orange. A wonderfully free-flowering variety which blooms in August and September; *nobilis*—massive spikes 7 to 8 feet in height, bearing distended orange-red coloured flowers 2 inches long, closely packed together to form a cone-shaped inflorescence a foot in length. The buds are crimson and devoid of any glaucous tint, and the flowers are canary yellow. At its best during September. *Pfitzeri*.—A showy, almost self-coloured form with very large long spikes of orange scarlet flowers, crimsoned buds, and yellowish tinted throat internally. There is no yellow colouring at the base of the inflorescence. It flowers regularly from August onwards, and the plant is not too coarse for planting in the smallest garden. *Saundersii*.—A vigorous form introduced twenty years ago, with stout spikes of rich red flowers passing to brick-red with age. Every flower stands at right angles with the stem. October.

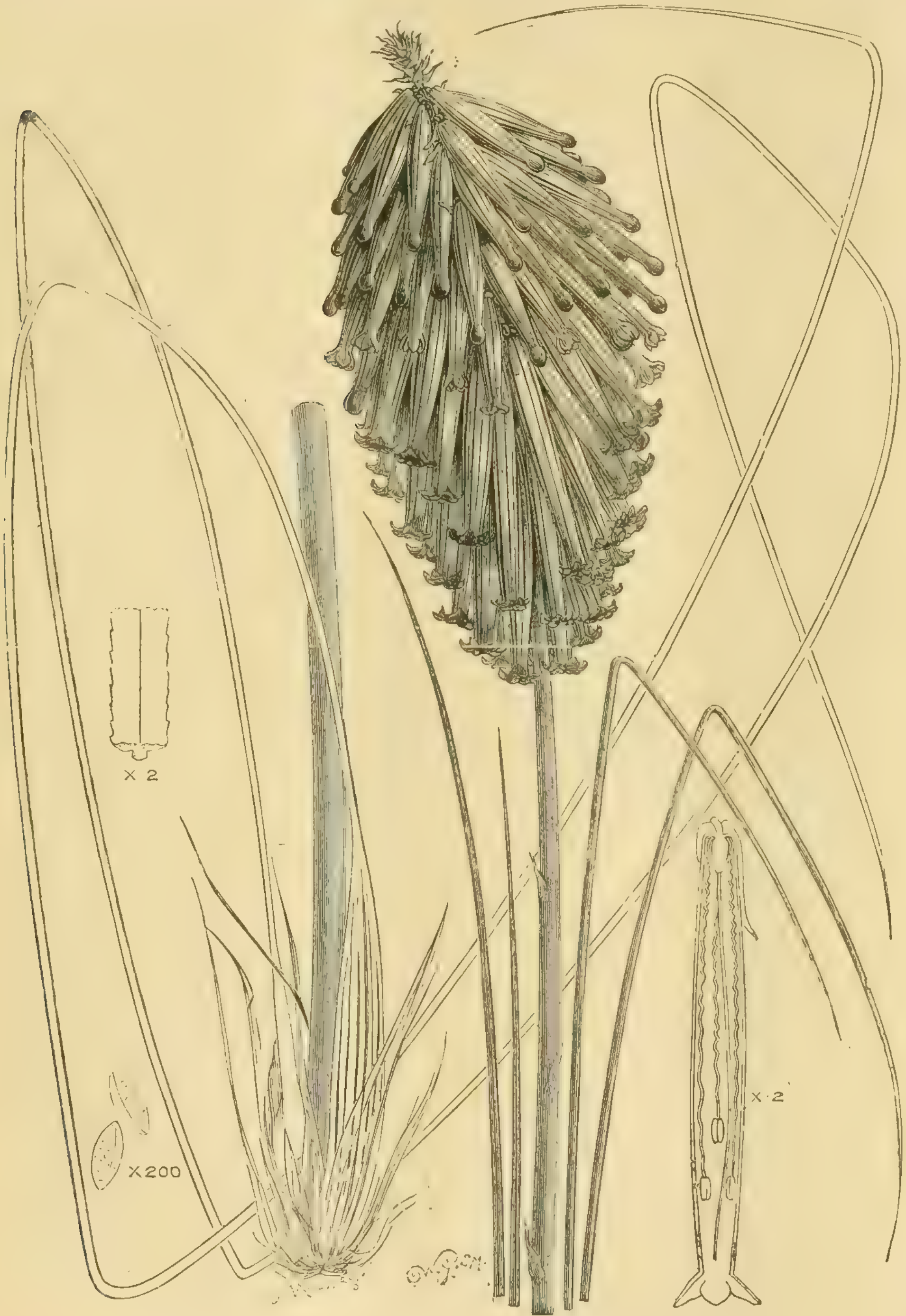

FIG. 37.—KNIPHOFIA NELSONI; COLOUR, BRIGHT CORAL-RED.
(The section through the flower and the fragment of the leaf are magnified 2 diameters, the pollen grains 200 diameters.)

K. breviflora.—A rare species that might be treated as a rock plant. The leaves are narrow and grassy, produced in tufts 2 feet high and through. The flower spikes develop in quantity during October, and they have short cones of lemon yellow-coloured flowers an inch long, tubular in outline and with reflexed lobes. Sixty spikes from a small clump are not an unusual number, and the plant appears to be exceptionally fitted for cultivation in a rockery. It is figured in *Bot. Mag.*, t. 7,570. An apricot-coloured, and a white form are in cultivation. A charming species, totally unlike the majority of Kniphofias.

K. Burchelli.—A showy and valuable species that differs but little from some forms of K. aloides in habit and colouring. It is a sturdy, compact plant, producing throughout summer a series of showy spikes of deep orange-scarlet-coloured flowers, generally more than one foot in length of spike and of uniform colouring throughout, except that the spent flowers show more orange than red in their colouring. A refined Torch Lily whose brilliant flower spikes can be singled out of a collection by their symmetry and the glowing flame-like depth of colour both inside and outside the expanded flower tubes. K. aloides var. Pfitzeri too often does duty for this species in gardens, but K. Burchelli may always be recognised by its reddish orange base and longer spikes produced two or three together.

K. caulescens.—A distinct plant producing stout fleshy stems, which branch dichotomously at intervals of a foot or thereabouts, forming a stout tree several feet in height, bearing huge rosettes of thick glaucous green, Aloe-like leaves, 2-3 feet long in well-grown specimens. The flowers are borne in stout spikes 2 feet in height, the actual inflorescence being 6-8 inches in length, coloured brick red with a glaucous sheen throughout, the flowers passing to a greenish yellow as they age. The inflorescence lacks refinement, and the plant always has an untidy mass of dead foliage clinging firmly to its stems, yet it is valuable for association with the larger order of rock plants, Yuccas, Eryngiums, and other evergreen plants of kindred types. Its flower spikes are produced in June, and they invariably show traces of injury by frosts in a nascent state if the season is late and the position devoid of shelter.

K. citrina.—A pretty plant of garden origin, whose neat habit and quaint flowers are very pleasing. The leaves are produced in Eulalia-like tufts 2 feet across, and are an ornament in any border. The spikes appear in quick succession from August onwards, and bear cones of pale canary yellow flowers, the buds of which are greenish, changing to straw yellow as they open, and the spent flowers are tinted dull white. The spikes are symmetrically cone-shaped, and they rarely exceed 3 feet in height when bearing flowers. Many people appreciate the delicate colouring and pretty habit of this choice plant. Its hybrid descendants are even more beautiful.

K. comosa.—A charming little Kniphofia from Abyssinia, forming grassy tufts 2 feet in height and producing elegant, attenuated spikes of lemon yellow-coloured flowers with short tubes and exserted anthers. It proves to be a hopeless plant for the English climate, and is at present exceedingly rare. K. recurvata I have sometimes seen labelled K. comosa splendens in gardens.

K. corallina.—The prettiest Kniphofia for small gardens. It forms an elegant tuft of narrow leaves 2 feet long, and produces sheaves of coral-red flowers of exceptional richness; no glaucous-grey or yellow colouring finds a place in this charming plant. It is among the first to flower and maintains a rich display throughout autumn. The flowers being mainly sterile, the plants suffer no tax in respect to seed production. K. Macowani is one parent and K. Burchelli is probably the other.

K. longicollis.—A tender species from Natal flowering in early winter. It is a slender-growing plant, growing 3 feet in height and having grassy leaves and long spikes of pretty deep yellow flowers. It is likely to prove of value to the hybridist as a means of introducing refinement into the coarser species, and may yet prove amenable to cultivation in the open borders when reared from seeds in the open, as was originally done with K. breviflora.

K. Macowani (see Fig 38).—A remarkably pretty plant that one can recommend confidently. It is of tufted growth, rarely exceeding

2 feet in height. The scapes are produced in great numbers throughout autumn, and they bear small and few flowered but pretty inflorescences coloured a deep coral red with darker tips. It is a choice little plant, and very easy to grow. The flowers are small and tubular, with reflexing lobes, and they are closely pressed to the scape, forming a very neat cone. Many seedling forms are now grown, but most of them lack the pretty habit of the type. *Brilliant* is the only variety I can recommend. It is twice as large as the type and equally choice.

K. modesta.—A somewhat tender Natal species that I have not tried in the open. It resembles Nelsoni in leafage, and bears long tapering scapes studded at intervals of half-an-inch with short-tubed, distended, white flowers, whose stamens and styles are much exserted. The inflorescence is quite 2 feet long and closely resembles that of Gasteria in habit. Useful only as a parent in improving the hybrid race. Although the plant possesses several pretty features, its comparative rarity and reputed tenderness are against its ever becoming much sought after. It flowers in September in a cool house.

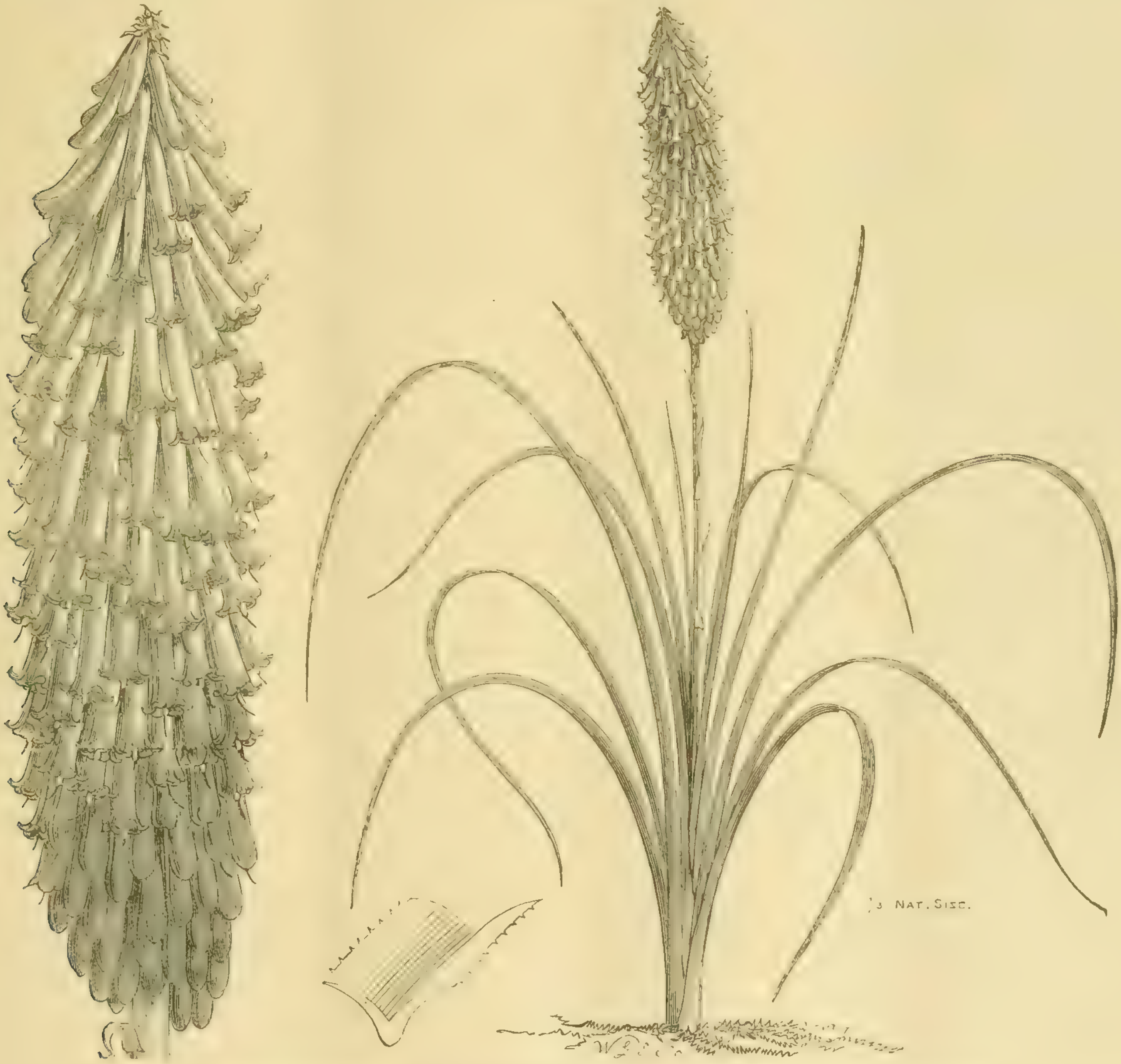

Fig. 38.—Kniphofia Macowani; colour of flowers yellow, passing to deep coral-red.

K. Nelsoni (see Fig. 37).—Few plants are more admired than goodly tufts of Nelson's Kniphofia. It is in many respects the gem of the genus. Its Eulalia-like leaves are produced in dense, yet graceful, tufts 2 feet in height, and as much in diameter; the remarkably pretty spikes are yielded in considerable quantity during September. Old-established clumps thriving in light sandy soil, give from 30 to 60 spikes in a season. The inflorescence is comparatively few-flowered, but very graceful—each flower is seen in perfect outline. They measure about 2 inches in length, are quite tubular, coloured a ruddy coral tint, and have reflexing petal lobes. It should have a place on the rockery where shelter can be given, and it has a splendid effect if massed among choice plants in borders. It is preferable to start newly acquired plants in pots before planting them out, or loss may result. I have seen splendid plants in the colder parts of Scotland thriving well in gritty soils without protection. *G. B. Mallett.*

(*To be continued.*)

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT ROSSLYN, STAMFORD HILL.

The famous collection of H. T. Pitt, Esq., is one of the richest and most varied in the London district, and one of the few in which rare species and varieties of pretty and curious plants are now to be found. Cattleyas, Lælias, and Cypripediums are great favourites, and the best procurable in each section have been obtained, and all have been cultivated well by Mr. Thurgood, the gardener at Rosslyn. But of all the specialities there the Odontoglossums, although the most costly, have proved to be the most satisfactory, and the collection embraces many grand blotched forms of Odontoglossum crispum which are not yet in any other collection. These have often been admired, and some have secured awards at the Royal Horticultural Society, in whose list of awards, by a coincidence, three of the best known forms of Odontoglossum crispum, viz., Persimmon, Pittiæ, and Pittianum are enumerated together as each having secured a First-Class Certificate when shown by Mr. Pitt, the next line recording O. c. Prebendary Bevan, another of the Rosslyn varieties which secured an Award of Merit. These four alone cost the price at which many a good collection of Orchids has been got together.

The Odontoglossums are housed in a range of houses specially constructed for them, and despite their proximity to the great Metropolis, they grow vigorously and flower well. Many are sending up strong flower-spikes, and some few are in flower. Among other varieties coveted by the Odontoglossum specialist were noted O. crispum F. K. Sander, known to be a marvellous blotched variety, but which Mr. Pitt thinks has never yet been seen at its best; O. c. Annie, O. c. Abner Hassall, O. c. xanthotes, Snow Queen, and others which had gained honours. Of fine varieties of species O. Hallii, King Edward VII. and the purple-spotted O. Pescatorei, Pitt's variety, take the lead in their sections, as do O. × Wilckeanum Pittiæ, and Pitt's variety in that class. Odontoglossum × Adrianæ Cobbianum, with its pretty flowe heavily blotched with chestnut red; O. grande citrinum Pitt's variety, of a clear canary-yellow colour; O. cirrosum, Pitt's variety, with its large heavily-blotched flowers, and the best forms of O. crispum, give pointed examples of wisely selected unique plants still holding their own, notwithstanding the large number of each of the species from which they were selected having flowered since those varieties appeared. Such experience gives the best excuse for the enthusiasm of first-class Odontoglossum collectors, as it plainly tells that the best forms will always be rare.

The smaller Odontoglossums occupy another house, and in one corner is a small batch of store pots of young seedling Odontoglossums raised from the best blotched forms of O. crispum and others in the collection. The object here is rather to perpetuate and increase the best blotched forms of O. crispum than to obtain hybrids.

Another range in three divisions contains a good selection of fine varieties of Lælia anceps, L. a. Amesiana, Crawshay's variety, and L. a. Schroderiana, Rosslyn variety, a fine white variety which closely approaches L. a. Waddoniensis, being two of the best. The plants are not allowed to make large masses with a number of old back pseudo-bulbs, but are divided and freed from such pseudo-bulbs, which make vigorous plants in due time. In the next division is a pretty specimen of Sophro-Lælia × Psyche, with nine light scarlet flowers; and an equally good plant of Sophro-Cattleya × eximia, together with other hybrids of Sophronitis grandiflora. A batch of seedling Sobralias, raised at Rosslyn, is showing flower for the first time; a specimen of the rare Phaius tetragonus, and an interesting collection of Mormodes, Catasetums, Cycnoches, &c., are also in this range, a part of which is fitted for the raising and perfecting of some promising hybrid Cattleyas, Lælias, &c.

The third division is filled with Dendrobiums, some in bud and flower. The next range, also in three divisions, has a fine collection of rare Cypripediums, the hybrids of C. bellatulum, and C. niveum being specially good. The difference in the vigour of plants of the same cross is shown by two plants of C. × Chapmani growing side by side. The older plant is still a comparatively small specimen, while its neighbour is probably the largest plant of its kind in cultivation. Extra constitutional vigour in the larger specimen appears to be the only explanation. The delicately-tinted C. × Felicity, a yellow form of C. × Barteti, C. × Ajax, a very large and distinct flower; C. × tessellatum porphyreum and some others are in bloom; and among curious and rare plants noted were Eulophia pulchra, with four spikes; E. virens, with three spikes; Trigonidium spatulatum, Epidendrum polybulbon, a large mass of Bulbophyllum barbigerum, a flowering specimen of B. occultum, and other Bulbophyllums, and Cirrhopetalums; a singular Maxillaria of the Dicrypta section with primrose-coloured flower; a batch of Ada aurantiaca, good masses of Sophronitis grandiflora, Ornithidium Sophronitis; a collection of the best Cymbidiums, and a great variety of species not often seen in private gardens.

The span-roofed Cattleya house has a fine collection of the best varieties of species and albinos as well as hybrids, most of which were selected in flower. The show of flowers at present consist of the varieties of Cattleya Trianæi and a nice batch of the beautiful Oncidium splendidum, which is seldom seen in such perfection. The position which it occupies in the house suits it admirably, as the plants are in a good light, and the atmosphere around them is not moist. Several of the plants have three spikes of flowers on each, their large, clear, yellow blooms making a fine display. Specially interesting plants are Lælio-Cattleya × Canhamiana, Rosslyn variety, of a bright purplish rose colour, and of great size; C. Schroderæ, Pitt's variety, with dark maroon colour on the lip, and which constitutes one of the unique varieties of the collection; a good collection of Brassavola Digbyana hybrids, one of them B. Digbyana × Lælia majalis, approaching maturity, being very promising.

The old warm house, which had been a Pinestove, has always suited the Phalænopsis which are suspended from the roof, the bed being occupied by a good stock of Eucharis amazonica, which also thrives well. P. Schilleriana is in flower. Another house contains a good collection of varieties of Cypripedium insigne, including the best yellow forms; a fine lot of Cælogyne cristata well furnished with sprays of white flowers. Here a large specimen of Aerides Vandarum has several spikes of white flowers, and Lælia × Latona, and some others are in bloom.

In the other house are many uncommon stove and greenhouse plants, and a well-grown collection of coloured Codiæums, Dracænas, and other decorative plants.

FOREIGN CORRESPONDENCE.

MEXICO.

PROFESSOR J. G. Lemmon and Mrs. Lemmon, the well-known botanists of Oakland, California, write that they have been in Mexico for about seven months. Some portion of their time has been spent in the city, the remainder having been passed in an exploration of the forests about Orizaba, from which place they returned a few days ago.

While in Orizaba they gathered a good many specimens of Mexican trees, which they intend to study closely after their arrival in California. All their time while in Mexico has been devoted to the study of trees, shrubs and flowers, and it is their intention to return next year and continue this study.

They were much impressed with the beauty of the forests about Orizaba. According to their statements, it would require many months to exhaust the possibilities of that section in regard to botanical exploration and classification of trees.

The oaks collected are very numerous, as was to be expected, and among the pines were Pinus Montezumæ of several forms, including the great macrocarpa with cones 8-14 inches long; P. Hartwegi, in several forms; P. pseudostrobus, in several seemingly distinct forms; P. leiophylla, in beautiful condition, showing especially its cones of three years' growth; P. oocarpa, in beautiful condition; P. Arizonica and P. Mayiana and P. Chihuahua, with a form perhaps of P. Ayacahuite were re-collected on the way in fine form in the Catalina Mts. of Arizona.

ENGLISH GARDENERS IN THE UNITED STATES.

IN the *Gardeners' Chronicle* for January 6th last a note appeared in the "Answers to Correspondents" column under the heading, "Situations in the United States."

I should like to inform *E. J. H.* that the condition of gardening here is much better than in England, and there is no difficulty in young, well-trained gardeners getting good situations in this country.

Head gardeners and superintendents experience some trouble in securing good men, and New York seedsmen are always glad to hear of men coming from England, and are ready to answer any inquiries, although they offer no temporary employment.

March and April are the two best months to arrive here.

The general wages for journeymen (or assistants, as they are termed here) is about 50 to 55 dols. per month, without board, or 30 to 35 dols. with board, board and lodging being worth about 20 dols. per month. The English value of one dollar is 4s. 2d.

It would be no use to attempt to advertise in the American papers, because they would not publish such an advertisement, it being contrary to the law of the U.S.A. for anyone to become engaged before landing, and the parties who do so are subject to a very heavy fine, besides the probability of being deported.

I am sure many young gardeners in Great Britain do not know of the advantages this country offers or they would leave England without hesitation.—*T. E. R., New Jersey, U.S.A.*

CULTURAL MEMORANDA.

ACHIMENES, TYDÆAS, &c.

(Continued from page 7[illegible].)

THE stolons of these plants having commenced to grow in pans, they should be left undisturbed till they have reached a height of 1½ to 2 inches. In the meantime prepare the pans, baskets, or pots in which the plants are to flower, by using as drainage materials a few large crocks with a 2-inch layer of small ones above them, and above these a layer of from 3 to 5 inches of soil similar in its composition to that recommended for starting the stolons, with a quarter addition of light loam, finely sifted and well incorporated with the other materials, not omitting plenty of silver sand. The young plants must be carefully lifted with as much soil as will cling to them, and set out in the new soil at from 2 to 3 inches apart, burying the stolons 1 inch deep, and making the compost moderately firm about them, then applying enough warm water to consolidate the soil, and returning the pans to the stove or other equally warm structure. Early started plants seldom need shade, and in a few days after replanting growth will recommence. Plenty of atmospheric moisture is better than spraying, either by means of the watering-can or syringe. When the soil has become dry and it is necessary to afford water to the roots, be careful not to wet the leaves.

GESNERAS.

These plants are among the handsomest stove herbs, possessing a more erect habit than either Achimenes, Nægelias, or Tydæas, and a sturdiness which in most cases does away with the need of artificial supports. Some of the best known species and hybrids in our gardens are G. zebrina, and the fine variety G. z. splendens, G. cinnabarina, and several hybrids obtained from G. amabilis and G. zebrina splendens. The plants possess velvety, dark green or bronzy leaves, and grow to a height of 1½ feet to 2 feet, forming pyramids of brilliantly coloured flowers. One of the most strikingly beautiful hybrids, the seed parent being G. discolor and the male or pollen parent Gloxinia rubra, is Gesnera Donklarii. This hybrid springs not from a stolon, but from a hard, woody sort of tuber of a perennial character, which increases in size slowly from year to year; the leaves are large, and when the treatment is of the right kind these furnish the stem quite down to the soil. In G. macrantha we have a cross between G. bulbosa and G. b. Cooperi. Provided a warmth of from 60° to 65° as a minimum be afforded during the season of growth, and bottom heat at the start of 75° to 80°, Gesneras are not difficult of cultivation. Those species and varieties which propagate themselves by stolons should be afforded the same kind of general treatment as that advised for Achimenes, although in order to avoid any check one stolon per small 60 pot is preferable to starting them together in pans or boxes, and several small repottings should be afforded whilst the plants are in full growth and previously to the flowers appearing. The tuberous species and hybrids require a slightly loamy porous compost, together with peat and half-decayed leaf mould and a fair amount of drainage material, whereas the stoloniferous species are the better for being afforded a lighter mixture. Those with velvety leaves should not be wetted overhead or their beautiful appearance will soon suffer. For an eight inch flower pot 5 plants are ample for forming a handsome object; and in order to secure uniformity of height and time of flowering, these plants should be of equal strength and height when planted in the flowering pots. G. Donklarii should be given a pot or pan to itself; and G. bulbosa and its varieties also. In order to cultivate Gesneras properly and flower them at their best, a place apart from the other inmates of the stove should be found for them, and failing a pit, heated with hot water, frames placed on a mild hotbed composed of tree leaves, and surfaced with spent tanners' bark, cocoanut fibre, or coal ashes finely sifted, would answer admirably; for in such conditions, ventilation, shade from strong sunshine, and provision of moisture, are matters quite under the gardener's control. It will conduce to healthy development of the foliage and flower spikes if very weak liquid manure be applied to the soil as soon as it is found to be well filled with the roots of the plants—not before. The plants form nice objects for furnishing vases and *jardiniers* in apartments that are not too cool, and in which they are not exposed to draughts from windows, doors, or ventilators. As materials for dinner table decorations *à la Russe*, when grown in 4½-6 inch pots, they are admirable. *F. M.*

THE ROSARY.

ROSES AND HOW TO GROW THEM.

New York: Doubleday, Page & Co.

No author's name appears on the title page of this little volume, but from the preface we gather that the compiler has availed himself of the work of several experts. In any case, from a glance at the book we can endorse the general statement that all that is really necessary for the amateur Rose-grower to know, in order that he may intelligently make a Rose garden, select his varieties, and grow the harvest of bloom, is told in this volume. The chapters are devoted to the questions when, where, and how to plant, the routine of work, pruning, diseases and their remedies, Roses for cut flowers under glass, types or races, Roses for special purposes, Roses of American origin. The book is written from an American point of view, and hence allowance must be made for differences in climate, when an attempt is made to follow out the author's precepts on this side of the Atlantic. At the same time it must be remembered that the climate of the United States is very far from being uniform. The conditions in Florida, Arizona, and California are widely different from those prevalent in the Eastern States, for instance. We have the advantage in some things, as we read that the term "perpetual," applied to Roses, is a misnomer in the Eastern States, where a season of bloom beginning in mid-June and ending in the following month is all that can be reckoned on with certainty, even for H.P.'s, what second bloom is produced being but scanty. As giving some idea of the commercial importance of Rose-growing near New York City, it is stated that about two millions of square feet are used in houses devoted exclusively to the production of Roses for the cut-flower market in one large "Rose factory" within twenty-three miles of New York. This may be very nice commercially, but it will hardly appeal to Rose-lovers. There is, however, no room for sentiment in business. The book before us is essentially practical, and well suited for the amateur, to whose notice we therefore commend it.

VAPORISING WITH HYDROCYANIC ACID GAS.

I have made good use of hydrocyanic acid gas for vaporising purposes during the last 12 months, and am very pleased with the result. I had plenty of material to experiment with, i.e., bug and scale, but now I have practically none.

The first house I fumigated contained Orchids, Ferns, Ardisias, and Gardenias, whilst Stephanotis occupied the wires overhead; the Stephanotis and Gardenias were badly infested with bug.

The first difficulty here was to lower the temperature sufficiently; the valves of the hot-water pipes were closed the first thing in the morning, but it was next to impossible to get the temperature below 59 degrees, and in order to reach this the plants had to be exposed to much draught. Secondly, a quantity of water had been thrown about up to the evening previous to the day of operation, so that I could not get a dry atmosphere. Nevertheless, bug was so numerous, and it had occupied so much time in sponging, etc., that I was determined to vaporise at 3 p.m. I used less than the prescribed quantity, i.e., 2½oz. of potassium cyanide per 1,000 cubic feet, and closed the house for 40 minutes, then opened it for an hour, when I thought it was quite safe to enter. I was naturally anxious to examine everything. The first thing noticed was a quantity of bug on the floor, and on the foliage under the Stephanotis, and all the bug remaining on the Stephanotis and Gardenias appeared to be quite dead. The plants, so far as I could judge so soon after the exposure to the gas, appeared all right. Next morning, however, I found a few bugs still alive; the scale was all killed. Further, I noticed some of the Orchid leaves were showing signs of injury.

In the course of a week I was able to form an opinion of the results of the experiment as regards damage, etc. The cyanide had either been too strong, or there had been too much heat, or moisture, or both; certainly the damage was not great, but it was desirable to avoid it in the future, if possible. Therefore, I decided to try again; this time the valves were closed the night before. The temperature next morning was just below 60 degrees, and it happened to be a dull morning, so that by opening the ventilators the temperature was quickly lowered to 55 degrees. An excess of moisture was avoided as much as possible. I used the same quantity of potassium cyanide, but closed the house for an hour, and afterwards opened it for an hour before going inside. The next morning an examination proved that the cyanide had been insufficient. I could find odd bugs still alive, and in the course of time I could not detect any ill-effects of the acid fumes upon the foliage. I tried a third time, practically in the same way as the last, but used more cyanide. This was in November, 1904; the results were entirely satisfactory, and I have not had occasion to repeat the operation since in the same house. A few plants have been brought out once or twice for scale, and exposed to the cyanogen fumes in other houses; that was not to be wondered at, as the plants are constantly changed from one house to another.

The plant stove was the next house to be treated: that was in June, 1905. I thought first thing in the morning would be the best time, the temperature being unavoidably high in the evening at that season of the year. The fire was allowed to die out during the afternoon prior to the morning of operation, so that the temperature at 6 a.m. was 57 degrees. The ventilators were thrown open for a short time to reduce the temperature and allow the moisture to escape, though efforts had been made the day before to prevent moisture. I closed the house and exposed the contents to the fumes for three-quarters of an hour, afterwards opening the doors at either end of the house, and finally the top ventilators. It was noticed that the temperature had risen considerably during the time the house was closed, the sun having shone a little on one end of the house. In the course of a day or two, it was found that practically all the bug, and scale, had been killed. At the same time some small Palms, Kentias, and Rondeletia had suffered. Undoubtedly this was due to the increase of temperature during the exposure. The house was again treated in October, but this time the fire was put out the first thing in the morning. No water was thrown about, the ventilators were opened towards evening, and the temperature was reduced below 55 degrees. The same quantity of cyanide was used as before, the exposure was the same, and the results were entirely satisfactory. Begonia, Gloire de Lorraine, and Cypripediums in flower showed no trace of injury.

The late Vinery was another house fumigated in this way after the Grapes were cut. It was the only fruit house infested with bug. I used rather more than the prescribed quantity of cyanide to make sure of destroying all the bugs. The temperature was low, 45 degrees, and the atmosphere dry. There were bug and thrips on the Vines, and scale on certain plants in the house. On examination, both immediately afterwards, and since while the Vines were being cleaned, not one live bug was found, although several dead ones were concealed under the bark. The thrip, scale, and, unfortunately, a good cat, previously unobserved in the house, were destroyed. The only plants to suffer from the stronger application were the Clivias; it was certainly too much for them. The vaporising has saved us a great amount of labour in one year; every gardener knows what it means when men have to spend their time sponging repeatedly for bug, and removing scale from Asplenium, Ferns, etc., with the point of a stick.

I use 2½oz. of potassium cyanide 95 per cent., 2½ fluid oz. of the strongest commercial sulphuric acid, and 10 fluid oz. of water per 1,000 cubic feet. My method is the following: I mix the acid and water in an earthenware bowl. Note: The acid must be added to the water, and not the water to the acid, or very serious results may follow. The affinity between the concentrated acid and water is so great that if a little water is added to a quantity of the acid, the action is so vigorous that it is quite likely the bulk of the acid and water might be forced out of the vessel over the person mixing them, and burn him severely, or even blind him. The requisite amount of acid and water in the bowl is placed upon the floor in the house, and the weighed quantity of cyanide is rapidly transferred from another dish to the one containing the dilute acid. I lock the doors and leave the house for three-quarters of an hour. In those houses where the ventilating gear will allow, I leave it so that I can open the top ventilators from the outside, but in most of the houses the apparatus consists of iron rods and worms, so that it is impossible to open the top ventilators from the outside without unscrewing and so liberating them. In some cases this would be very difficult, the screws having rusted in the wood. In cases of this sort, after the time of exposure, I open the doors at either end of the house, and leave it for perhaps twenty minutes or so, then take a deep breath, rush in and open the top ventilators as quickly as possible, and out again; then go back in the same way to open the front ventilators, and leave the house for an hour, when one may go in safely. I know this is a very dangerous performance, and one that is not to be recommended. If I had no knowledge of chemistry I should devise some other means of opening the house from the outside, and this is what I should strongly advise others to do, because cyanide is a most DEADLY POISON. We must never forget that.

I have seen in the *Gardeners' Chronicle* at different times that sodium cyanide 130 per cent. has been recommended. How is it possible to get more than 100 per cent. absolute purity in a chemical compound? [This is a commercial term meaning that the sodium cyanide contains 130 parts of cyanide to every 100 parts of sodium.—Ed.] I think I am right in saying sodium cyanide is more difficult to obtain than the corresponding potash compound. We find it so here. I am aware there is one thing in favour of the sodium cyanide, i.e., according to the chemical formulæ of the two compounds, 1lb. of sodium cyanide pure yields as much gas as 1⅓lb. of potassium cyanide pure. I don't know the price of the sodium cyanide, therefore do not know the cheaper source from which to obtain the hydrocyanic acid gas, but, supposing they were both 1s. per lb., the sodium compound would be the cheaper, because it would yield the most gas. *W. H. Dobson, The Gardens, Stapleton Park, Pontefract.*

[Those who try this most effectual, but most dangerous remedy, should contrive some means of lowering the cyanide into the acid from without so as to avoid the necessity of being in the house at the time the cyanide is dropped into the acid.—Ed.]

THE HARDY FLOWER BORDER.

TWO MONTBRETIAS.

Two varieties may be noted here. Neither belongs to the large-flowered section, some of which, by the way, are not such effective border plants as the best of the older small-flowered type. M. Vulcan is one. The plants grow tall for Montbretias, this being by no means its least charm. The colour in a mass is good and effective, and the plants are among the earliest to flower, which will increase its value in late districts. The other is M. "fleurà jaune," a clear and good yellow. I think the best of the colour. The plant belongs to the dwarf section, but is not as dwarf as either Eldorado or Matador. I am hopeful that "Tigridie" will prove a splendid border plant, but one has to see Montbretias in groups of one to three hundred plants to gain a good idea of their effectiveness as garden flowers.

GIANT HELIOTROPES.

By sowing early, large standard in pots may be had in flower in July, or in the open, if required for borders. But strong floriferous plants for borders are produced with less trouble by sowing and growing on in the same manner as tender annuals. The flowers are either whitish or blue in several shades, some of which are distinct and pretty. These originated with M. Lemoine, of Nancy, but seeds are now procurable in England. M. Lemoine grows a select few by name, and these, of course, are true to colour, but they are so easy to produce from seeds that for ordinary purposes those who care to try them as border plants should be advised to propagate a stock in that way. *R. P. B., Prestonkirk, N.B.*

KEW NOTES.

Solanum integrifolium.

This plant is a native of Asia and Africa; its chief beauty is afforded by the fruits, which resemble small corrugated Tomatos. The attractiveness of the plants in the greenhouse and conservatory does not depend entirely on the proportion of brilliant colour they supply, but rather on their variety. The flowers of S. integrifolium are small, and the leaves vary in size from 5 to 8 inches in length and 4 to 5 inches in width.

Propagation is effected by seeds, sown preferably in February or March in a warm house. Prick the seedlings off into small pots or boxes when large enough to handle, and cultivate them in an atmosphere of intermediate temperature for a time. When affording them the final potting if pots measuring 6 or 7 inches in diameter be used they will be large enough. The plants may be hardened off and plunged outside for six or eight weeks, if the weather is favourable, in July and August. Failing this grow them in a house where they will get abundance of light and air.

A number of plants in No. 4 house are bearing both red and green fruits. This winter the shoots were not stopped, and the plants flowered a second time in December. They will last in good condition all through the winter. *A. O.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Plants of Odontoglossum crispum and hybrids that have been obtained from this species that were repotted last autumn have now become well rooted in the new compost and have their growths well advanced. Where it is found desirable to increase the stock of any special variety, the rhizome of the plant may be partially severed with a sharp knife, and in a few weeks should be cut quite through. My practice has been to cut the rhizome just behind the second pseudo-bulb, leaving the two front bulbs to support the leading growth. In time old pseudo-bulbs will produce one or more new growths, and by the autumn they will have made some roots, when they may be removed from the front portion of the plant and be potted up separately. By adopting this method young plants are produced more freely and with less trouble than by the old plan of cutting the pseudo-bulbs off entirely and suspending them in the house,

The Mexican Lalias as L. albida, L. autumnalis, L. Gouldiana, L. anceps, and its numerous varieties will now be commencing to make new roots, and immediately these are observed the plants, if necessary, should be supplied with fresh material about their roots. Well established plants, that do not now require larger receptacles, should have any old worn out material carefully removed from about the roots and fresh compost substituted for it. These Lælias may be grown in pots, shallow pans, or teak-wood baskets, but, whichever receptacle is chosen, it is imperative to provide good drainage. The compost should consist of a mixture of one-half fibrous peat, one quarter sphagnum-moss, and one quarter leaf soil, to which may be added some small crocks and coarse silver sand. In the course of re-potting press the materials firmly together, and keep the rhizome of the plant about on a level with the rim of the pot. Until the plants have become re-established and are again growing freely, merely keep the surface of the compost moist to encourage the new sphagnum-moss to grow. The atmosphere of the house should still be kept at a temperature of about 55° at night, but during the day it may rise as high as the sun heat will raise it if ventilation is afforded with discretion. When the new growths appear the degree of warmth and moisture should be gradually increased. Such species as L. albida, L. autumnalis, and L. majalis should be suspended in a light position in the cool house. Cockroaches and woodlice are very fond of the roots of these plants, and therefore every means should be taken to eradicate them.

Heating and Ventilation.—The weather being very mild, each division should be given a thorough damping down every morning; the paths and the surface beneath the stages will require to be sprinkled again in the afternoon. The temperatures at night need not be raised above those given in the issue for January 6, The day temperatures should also be kept the same so far as fire-heat is concerned, but when the sun causes the temperature to increase, admit air to every department through the bottom ventilators. In the Phalænopsis-house and Dendrobium-house, where many plants are now in bloom, a "chink" of air should be admitted through the top ventilators whenever practicable, so as to allow any over-abundance of atmospheric moisture to escape, and thus prevent the flowers from becoming spotted.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

The Rosary.—All renovations and improvements must be completed as early as possible, and any planting left over from November can now be proceeded with as soon as the weather permits of the ground being worked properly. Though November is the safest month of the year in which to plant Roses, many prefer to do the work in February, and even March, and excepting cases where the soil is of a light nature there is not much to be said against doing so. There is one decided advantage, however, that November planting has over that in February which cannot be overestimated, and this is, that in purchasing from Nurserymen the best plants naturally are selected first, therefore growers who defer planting until February often have to be satisfied with indifferent quality in the varieties they particularly desire. When about to plant Roses, too much stress cannot be laid upon the urgency of trenching deeply, and of supplying to the soil abundance of farmyard manure. In the management of the Rosary the best results are obtained by providing beds to contain each its own particular variety, and they should be large enough to hold from 20 to 30 plants each. Larger beds might be planted with a number of varieties, taking care that the flowers will not only agree in colour, but also that the plants will be of the same habit of growth. In these larger beds half-standards could be used with advantage for planting amongst the dwarfs, and this would relieve the effect. Where practicable exclude Hybrid Perpetuals from the Rosary, and also the rampant-growing Polyanthas, and grow principally the recognised decorative Roses of the Tea-scented, Hybrid Tea, China, Noisette and Dwarf Polyantha types, because of their perpetual blooming habit. The season of blooming of Hybrid Perpetuals is comparatively so short that it is generally desirable that they should be grown in the "garden for cut flowers," and also that the strong growing Polyantha Roses should be restricted to the Rosary in the wild garden.

Varieties to Plant.—For beds devoted to one variety, or for the larger beds to be associated in colours, the following varieties occur to one as being a few of the very best for the purpose:—Caroline Testout (H.T.), Bardon Job (H.T.), Grüss an Teplitz (H.T.), Hon. Edith Gifford (T.), Madame Lambard (T.), Préfet Monteil (T.), Corallina (T.), Madame J. Dupuy (T.), Madame Berkeley (T.), Madame Antoine Mari (T.), Dr. Grill, Souvenir de Catherine Guillot (T.), Ma Capucine (T.), Anna Olivier (T.), Lady Roberts (T.), and Laurette Massimy (C.). A very pleasing feature could be made in the Rosary by devoting a bed or group of beds to those varieties possessing the sweetest scent. In a bed of this description such fragrant roses as La France (H.T.), Madame de St. Joseph (T.), and Zéphyrine Drouhin (B.), should unhesitatingly be placed.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

The Stove.—The longer days and the increase of light and sunshine will soon set the machinery of plant life in motion. The atmospheric temperature of stoves should be gradually raised to promote active growth. At night it may now range from 65° to 68°, allowing an increase or 10° or more on bright days. More moisture should be maintained in the atmosphere, and such plants as need it may be gently syringed overhead with tepid rain water. The propagation of plants in general should now be given attention. Before inserting any cuttings let them be examined, and if there are any insects present dip the cuttings in a solution of XL-all insecticide.

Allamandas.—Plants that have been resting for the past two months may now be started into growth. Potting may be done either while the plants are in a dormant state, or after they have commenced to grow. Whilst they are still dormant is perhaps the most suitable time, inasmuch as there is then no risk of breaking the young shoots. Reduce the old ball by one-half, after which soak the remaining half in tepid water and allow it to drain thoroughly before repotting. Fibrous loam, with a little sand and dried cows' manure added, will be found to be a suitable compost. Avoid over-potting the plants. Cultivate them in a position close to the glass in full sunshine, and afford free ventilation.

Clerodendrons require similar treatment to that advised for Allamandas, with the exception that the roots should not be disturbed more than is necessary. These plants succeed well in the same pots for two seasons or more, provided a top dressing of dried cow manure, leaf mould, and soot be given; also frequent supplies of liquid manure during the growing season.

Eucharis.—Plants that have flowered should be given copious root waterings, and if the pots are well filled with roots and have not been repotted for some time, afford them liberal supplies of manure water. Clear soot water may be applied to the roots at any time, and if the plants are syringed with it occasionally they will be benefited.

General remarks.—Pits and frames containing miscellaneous plants should be examined. Any plants that may require to be propagated should be placed near to the light to make strong growths for use as cuttings. If not already done, have the water cisterns cleaned out, for the winter rains will have carried a deposit into them from the roof glass, and as the syringe will soon be coming again into use it would convey the deposit on to the plants and wood-work in the houses. There is no better safeguard against any serious attacks of insects than that of keeping the plants in a vigorous state of health, and of maintaining strict cleanliness in the structures in which they are grown. Any bulbs that are still plunged in ashes should not be allowed to remain there very long. Let Cinerarias and Calceolarias be kept close up to the glass, and be afforded free ventilation, also liberal supplies of liquid manure. The application of water to the roots of plants should be very carefully studied, especially so immediately after plants have been repotted and the young roots are just advancing into the new soil. Carelessness in affording water often ends in the constitution of a plant being deranged for the whole season.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Melons.—Where hotbeds, composed of leaves and long litter, have already been made up, as was advised in a former Calendar, and provided the soil has been got into the house and warmed, the plants may be put out at once or as soon as they are sufficiently rooted that it is possible to turn them out of the pots without breaking the balls of soil. The compost should consist of turfy loam, lime scraps, wood ashes, soot, and about 1 lb. of bone meal, also 1 lb. of ½-inch bones to each barrow full of compost. The compost should be made up into a ridge and beaten down firmly. It is a good plan to make little mounds of loam and wood ashes in positions on the ridges where the plants are intended to be grown, for such mounds act as a preventive of too much water reaching the stems of the plants, and so helps to keep the plants free from canker. Some gardeners prefer to grow and fruit their earliest batch of plants in pots, which should not be less than 11 inches in diameter. These are plunged into the hotbed up to their rims, and filled with the same kind of compost already described. When the plants are first put out in their permanent positions, and provided there is strong sunshine, they may require to be shaded for a few days whilst becoming established in the soil. The atmospheric temperature of the house should range from 65° to 68° at night, and maybe 10° higher during the day. Maintain considerable moisture in the atmosphere by frequently damping down all available spaces in the house. Syringe the plants and close the house early in the afternoons to economise fire heat.

Cucumbers.—Plants which have been in bearing since last October are probably almost exhausted, but if given very careful treatment, and rich top dressings of fresh horse manure are applied to the roots, they may be encouraged to yield a few more fruits, and thus be of use until the successional plants begin to bear. It is not very difficult to obtain Cucumbers during the last three months in the year, but in order to have plenty during the first three months in the year much attention must be given, and suitable houses where the plants can obtain all the light possible are necessary provisions. The atmospheric temperature should be from 65° to 68° at night and 75° by day. Let the foliage be syringed on all favourable occasions to prevent red spider.

Vine "Eyes."—It is convenient to have a few young Vines growing on for the purpose of inarching them on to other varieties, or for use in planting out in permanent borders. Select plump "eyes" from well-ripened wood, leaving about 1½ inch of wood to each eye. Cut the wood on the under side in a slanting direction, and place each "eye" in a 3½ inch pot which has been filled with sandy loam. Plunge the pots in a mild bottom heat, when they will soon make roots if kept in a uniformly moist condition.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Celery.—Those who require to have Celery fit for consumption in August should now sow seeds in moderately rich soil in shallow boxes. Let the soil be watered after it has been pressed down in the boxes and just before sowing the seed. Finish off with a slight sprinkling of finely sifted soil only just sufficient to cover the seeds. Celery seeds sometimes come up very irregularly, therefore do not throw away a boxful simply because a few seedlings only first appear; others will come up in all probability a little later on. Veitch's Early Rose and Sutton's Dwarf Gem are very suitable varieties for early crops. I do not recommend the so-called self-blanching varieties, of which White Plume is one that is mostly grown. For early exhibition purposes Dobbie's Invincible White is one of the best, with Standard Bearer as a first-rate red variety.

Early Cauliflower.—Young seedlings from last month's sowing will require to be pricked off in frames, and preferably over a slight hotbed. A few may be potted up also with a view to cultivating some early "heads" under glass, using pots 8 inches in diameter, and though the "heads" will not be of large size they will be very early, and consequently much appreciated. Make another sowing in boxes to form a succession, and a third sowing in a cold frame.

Winter Onions.—Towards the end of the month transplant these into lines 15 inches apart, and allow 6 inches space between each plant. Rich soil is essential in the cultivation of very fine bulbs. Thin out the seedlings in the lines at the same time, but take care not to thin them too severely, as there is always the danger of loss caused by some of the plants running to seed, which is much more prevalent in some seasons than others, even with the same variety.

Shallots.—The present is a good time to get in this crop, for if planting is done late, the subsequent crop is always of less amount. Plant them in rich soil which has been deeply worked. This remark applies to nearly all vegetables. The small Cluster variety is very serviceable when grown for pickling, and the Red Dutch, which is large, is the most useful for slicing for flavouring purposes. There are several selections of this latter variety, which are improvements on the type, and a good one should be secured. Seed may now be sown in the same way as that of onions, and many cooks prefer the young seedlings to Onions for use in flavouring.

Turnips.—If seeds are not sown until the end of the month there will be less fear of the crop being spoiled through "bolting." But if a frame can be spared let a sowing be made now on a slight hotbed, followed by another sowing made in a cold frame. A succession of nice tender roots may then be anticipated before there are any fit for use out of doors. Turnips require a light, firm soil, and a sprinkling of soot mixed with it. Thin out the seedlings as early as it is possible to do the work, and before they get "leggy," which is the ruin of many young plants. Early White Milan is one of the best varieties for cultivation in frames, and may be followed by Snowball. The latter is the better Turnip, being deeper in the flesh, but it is later in coming to maturity. A small sowing may be made out of doors shortly on a sheltered and warm border, employing the same varieties. The loss will not be great if they fail, and there is the possibility that they will succeed.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Pruning Apple and Pear Trees.—If this work has not been completed, let it be hastened as much as possible, for the buds are beginning to push. Prune the spurs somewhat severely in order to induce them to "break back," but favour those buds which are most suitably placed. Thin the spurs out as much as is practicable, in order that those which remain will be the better exposed to the influence of light and air. Young shoots in a vigorous condition should be cut back more severely than others. Thin out the branches of any standard trees that may still remain to be pruned, and shorten the longest growths.

Vines should now be pruned; Raby Castle is a fine variety for affording decorative foliage, being of a dark port wine colour and often called by that name. It is suitable for cultivation on old or unsightly buildings.

Strawberries.—Beds that have not been mulched may have the surface soil between the rows lightly pricked over with a fork, and a good mulch of manure placed over it. Prepare a piece of ground by trenching it and adding manure, that the soil may be ready to receive plants next month. Royal Sovereign, if wintered in pots, succeeds very well under this treatment, and is capable of producing fine fruits. A system that may be recommended as a good one for producing an early crop of fruit outside, is that of planting strong crowns on a south border and covering them with frames.

Crab Apples.—These fruits are very nice, and they answer a double purpose. The trees are beautiful when in flower; they continue to be showy all through the summer and the fruits make an agreeable preserve. The Siberian Crab is one of the best. Others to be recommended are John Downie, The Dartmouth, Mrs. John Seden, and The Langley, which are newer and very showy. They form very beautiful standards.

Blackberries, &c.—Good plants of these can be procured in pots, therefore planting may still be done. Wilson's Early is very productive, and Wilson, Junr., a large fruited variety. The parsley-leaved Bramble, Rubus laciniatus, is one of the most serviceable. The Logan Berry, a hybrid from the Raspberry and Blackberry, is grown extensively. The fruit is of large size and rich in colour, possessing a fine flavour which makes it of use for dessert or for culinary purposes. This hybrid makes a robust growth, and should be trained to strained wires, or be supported on poles or stout stakes.

Filberts and other Nuts.—Thin out the wood of these bushes and remove all suckers from the base.

THE APIARY.

BY CHLORIS.

Its Position.—Very few people seem to realise how necessary it is to choose a suitable site for the hives. Many of my acquaintances place them under hedges, in spots sheltered from the sun, and even in a very weedy portion of the garden. Last year I was requested to overhaul some bees by the head gardener at a large establishment, and I could scarcely see the hives for tall weeds.

What then is a suitable place?—It should not be where there is much traffic, e.g., near a path or croquet ground. It will be well to choose a low position on rising ground, sheltered from north and east winds. It will be well to let the entrances face to the south-east, so that the inmates may feel the warming and rousing influence of the early morning sun. The stands of the hives should not be very high, for the bees returning heavily laden often have a difficulty in reaching a high alighting board. There is also another drawback, and that is the hives are in greater danger of being blown over in a gale when they stand too high above the ground. The land in front of the hives should always be kept free of all plant life for a space of 2 or 3 feet.

Distance between the Hives.—If two or more lines of hives are kept, there should be a space of from 12 to 18 feet between the lines and a distance of 6 feet between the hives in each line.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Feb. 10 Dutch Gardeners' Soc. meet.
TUESDAY, Feb. 13 Ann. Meet. Roy. Hort. Soc. at 3 p.m. Committees meet at 12 p.m. Hort. Club Ann. Meet. & Dinner.
THURSDAY, Feb. 15 Linnean Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—39·0°.

ACTUAL TEMPERATURES.—

LONDON.—*Wednesday, Feb.* 7 (6 P.M.): Max. 45°; Min. 37°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 8 (10 A.M.): Bar., 29·9; Temp., 45°; *Weather*—Dull.

PROVINCES.—*Wednesday, Feb.* 7 (6 P.M.): Max. 47° Ireland West; Min. 39° Colchester.

SALES.

MONDAY NEXT—
Thousands of Hardy Border, Herbaceous and other plants, Lilies, Roses, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
Sale of Roses, Lilies, Rhododendrons, &c., at Stevens' Rooms, King Street, Covent Garden, London.

WEDNESDAY NEXT—
The Freehold Property, the Exotic Nurseries, Heritage Road, Coalville, Leicestershire, with Dwelling-house, Greenhouses, trade buildings, &c., at Railway Hotel, Coalville, by Protheroe & Morris, at 4.

WEDNESDAY NEXT—
Herbaceous and border plants, Gladiolus, Begonias, &c., at 12; Roses at 1 and 3, also Azaleas, Palms, plants, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY NEXT—
Roses, Azaleas, Hardy plants and bulbs, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY NEXT—
Choice imported and established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

Variation in the Potato Tuber.

M. Edouard Heckel contributes a paper to a recent issue of the *Comptes Rendus* on variation in Solanum tubers, which is of great interest to Potato raisers and to botanists. He mentions the rapid and important changes in the vegetative system as also in the reproductive organs of Solanum Commersoni reported to have been observed by M. Labergerie at Verrières. This plant had been cultivated by M. Heckel at Marseilles for six years without any such variation in the specific type having been observed. In these specimens it was the tuber that was especially modified in size, in colour, taste, and the nature of the skin. It became edible and, finally, developed four varieties: violet, yellow, rose, and white, which all sprang from a tuber supplied by M. Heckel that was originally yellow. It was remarkable that variation in the tubers affected first the colouring of the skin and even of the flesh as in the case of Oxalis crenata, the Jerusalem Artichoke, and the Yam.

The violet variety is the most remarkable, and some growers, as we have already stated, conjecture it may be the same as a variety of Solanum tuberosum known as *geante bleue*, a view which M. Labergerie strongly disputes. M. Heckel also has no doubts as to its origin, for he reports that he has seen, in the Botanic Garden at Marseilles, tubers of the violet variety yield plants that afforded a reversion to the purest type of S. Commersoni, whilst at Verrières M. Labergerie found all intermediate stages between the cordiform fruit of S. Commersoni and the round fruit of S. tuberosum. Having grown Solanum Commersoni, S. Maglia, S. Fendleri, S. Ohrondi, and S. stoloniferum unsuccessfully in Provence, M. Heckel resolved to start afresh under different conditions, and to commence with S. Maglia. In 1905 he received from MM. de Vilmorin, who had long grown this species, and from Messrs. Sutton and Sons, of Reading, violet and yellow tubers of S. Maglia. Planted in a warm house, supplied with the usual manures (super-phosphate, potassium chloride and nitrate of potash), the tubers yielded fine plants, and their flowers were identical with those of S. Maglia. At the end of April many of them ceased forming tubers, and M. Heckel resolved to turn them out of their pots and put them in the open ground in a bed where the preceding year he had grown some plants of Sutton's Discovery, North Star, and Edward VII. These are all varieties of the common Potato S. tuberosum selected, on account of the abundance of pollen they yield, for hybridising (successfully, as it proved). S. tuberosum was used as the pollen parent, and S. Commersoni as the female. Mole crickets and various accidents eventually left only one plant of the yellow S. Maglia alive. Last November this plant bore at its base, without stolons, five tubers very varied in character, but all red-violet in colour.

While the tubers planted weighed 4 grammes and 5 grammes, and measured 2 cent. 5 long, those which M. Heckel gathered measured between 5 and 9 cent. and weighed from 30 to 130 grammes. The lenticels had disappeared, the flesh was no longer watery and bitter or tasteless, but was firmer, contained more starch, the eyes were developed, and the tuber was now edible. In a word, this variety of S. Maglia behaved in the same way as that raised at Verrières in 1901 from Solanum Commersoni, of which yellow tubers were sent to M. Labergerie. This result induced M. Heckel to think that the vicinity of S. tuberosum and its influence on the surrounding soil was responsible for the variations. Evidently these results were not due to cultural causes, but were probably due to the same phenomena recently observed by M. Bonnier in the ordinary Potato. Clusius, it is stated, was only able to obtain tubers on plants raised from seed by the aid of a little earth surrounding the tubers. M. Heckel is repeating, on all the wild tuber-bearing species that he can procure, the same experiments which were carried on with the tubers in a state of variation, and he desires that growers of these same varieties should repeat his trials, as the importance of the subject demands careful checking by several observers. In any case, M. Heckel's experience serves to confirm the opinion of A. de Candolle that the S. Maglia of Chili and Peru was the wild species whence our cultivated Potato originated. The fact admitted of no doubt historically, and M. Heckel has now proved it experimentally. It is possible that the tuber which was the subject of the variation here described resembles some known and cultivated form of the common Potato, as it sprang from the violet variety of S. Commersoni. This is not surprising, since most writers who have studied the matter agree that S. Commersoni and S. Maglia had a share in yielding the numerous varieties of the Potato in cultivation that are classed indifferently now as S. tuberosum.

It would seem from the results published by M. Labergerie and M. Heckel that we have here to do with a process analogous to what De Vries calls "mutation." It is equally evident that the observations of the two gentlemen above-named require to be repeated in various localities before their inferences can be accepted as free from doubt.

With regard to the identity of the tubers gained by M. Labergerie with those of "Blue Giant," there is, as we have already stated, considerable difference of opinion. M. Labergerie is convinced that his tubers are different from those of Giant blue. M. Heckel, as we have seen, shares M. Labergerie's convictions. M. Gaston Bonnier says, from trials made at Fontainebleau, that in dry soils it is impossible to confound the two sorts, but that in damp soils the difference is not so perceptible, although, even then, careful examination reveals points of distinction. M. Labergerie's plant, says M. Bonnier, differs from the Blue Giant in the greyish violet colour of the tubers, the abundance of lenticels, and its earlier ripening. Moreover, the Blue Giant cultivated in soils of the most varied character, neither develops the great variability of the sport derived from S. Commersoni, nor the reversions to the wild form which have been observed in the last mentioned.

Incidentally, M. Philippe de Vilmorin contributes an interesting addition to this discussion. In the Bulletin of the Botanical Society of France, No. 7, 1905, p. 535, M. de Vilmorin expresses a doubt as to the origin of M. Labergerie's variety, and goes on to allude to the not infrequent production of tubers on the haulm. In his experience this production of aerial tubers is more common in violet coloured Potatos than in any other, and occurs especially in cases where the vegetative growth is rendered excessively luxuriant by the humidity of the soil. In our own experience we have thought that the production of tubers on the haulm was sometimes due to some injury to the underground tuber by a digging fork, wire-worm, or other source of injury to the subterranean parts of the stem. But this is a point which demands investigation. The instance described and figured by M. de Vilmorin is specially remarkable in that the aerial tubers were not produced on the haulm but on the inflorescence. It would seem, from M. de Vilmorin's figure that certain branches of the inflorescence which, under ordinary circumstances should be short, slender, almost thread-like, and terminated by a flower, have developed into stout herbaceous, leaf-bearing shoots like those of the ordinary haulm, but even thicker. From the axils of the leaves on these modified shoots aerial tubers have been formed.

The problems to be solved then are these:—Are we to consider Solanum tuberosum (our ordinary Potato), S. Commersoni, and S. Maglia, leaving others for the time being out of consideration, as separate and distinct species, or can we believe that the one may develop from the other by "mutation" or otherwise? If this latter view is proved to be the correct one, may it not be that S. tuberosum itself is only a derivative from some other species? In that case it might be of the greatest practical importance to know the conditions which have brought about these changes. And so it comes about that variations which are sometimes rather disdainfully called sports or "freaks of Nature" (as if there was ever any caprice in Nature!) become of the highest importance scientifically and practically. The exhibit of species of Potato which Messrs. Sutton tell us they will display at the meeting of the Royal Horticultural Society on Tuesday next will, in view of the circumstances just mentioned, be scanned with unusual interest.

Our Supplementary Illustration.—The group of Chrysanthemums shown in our supplementary illustration was exhibited by Mr. H. J. Jones, Ryecroft Nurseries, Lewisham, at the exhibition of the National Chrysanthemum Society held at the Crystal Palace in December last. This group was greatly admired, and it received one of the highest awards given at the Show, in the form of a large gold medal. All the various sections of this popular flower were represented in the group, a feature being the single-flowered and the smaller decorative sorts, which were arranged among the larger specimen blooms. Among the latter, Mrs. Swinburne, a pure white variety, received a First Class Certificate on account of its beauty and for its value as a late variety. Mrs. Beech, a yellow sport from the last-named variety, was also shown in good form. Mrs. W. Elliott, a large, white flower with very long, drooping florets, Crimson Gem, a medium-sized bloom rich in the colour indicated by its name, Market Gold, and Glory, a new golden-yellow decorative flower, are other worthy varieties included in the display. Of the singles, Silver Star was one of the most prominent. The large specimen blooms seen in the foreground were arranged among Ferns, which manner of staging was more effective than if the flowers had been arranged stiffly on boards. It has been remarked for several years past that some of the trade growers, particularly Mr. H. J. Jones and Mr. Norman Davis, have arranged groups of Chrysanthemum blooms and decorative foliage plants in a manner that has won admiration by reason of the bold effect obtained. Mr. Davis' group in the Royal Horticultural Hall in November last was a good instance of this.

The Botanical Magazine.—The contents of the February number, edited by Sir William T. Thiselton-Dyer, comprise coloured illustrations and descriptions of the following plants:—

Eulophia nuda, *Lindley*; tab. 8,057.—A terrestrial Orchid found wild from Nepal and Burma to Ceylon, as well as in the Chinese province of Yunnan. The leaves are plicately folded; the flowers borne in erect scapes; perianth segments ascending, rose-pink; lip—trowel-shaped with a yellow disc margined with deep rose, and a rather long conical spur. The variations in colour are said to be very great.

Saxifraga scardica, *Grisebach*; tab. 8,058.—A sturdy species which "may be expected to supersede, to some extent, the well-known S. Burseriana, as it is more showy and stands damp weather better." It is a native of the Balkan Peninsula.

Iris Sieheana, *Lynch*, in *Gardeners' Chronicle* (1904), p. 282; tab. 8,059.—Closely allied to I. persica, but differs in its stiffer leaves and the colour of its perianth, which is silvery-grey, striped with reddish purple.

Lonicera pileata, *Oliver*; tab. 8,060.—A low-spreading shrub with hairy branches, ovate evergreen leaves and pale yellow flowers in the axils of the leaves. The flowers are in pairs, united at the base, and the calyx-tube is provided with a sheath-like outgrowth directed downwards. The plant was introduced to the Veitchian nurseries by Mr. E. H. Wilson.

Prunus triloba, *Lindley*, in *Gardeners' Chronicle* (1857), p. 268; tab. 8,061.—A charming spring flowering species, the leaves of which are often three-lobed. Very often, too, the flowers contain three, or even five, carpels in place of the ordinary single pistil.

The Surveyors' Institution.—The next ordinary general meeting will be held in the lecture hall of the Institution on Monday, February 12, 1906, at 8 p.m. when the discussion on Mr. Marshall's paper will be resumed.

Nursery Employees at Dinner. — The well-known nursery firm of Messrs. Cypher and Co., Cheltenham, recently entertained the whole of their indoor staff at dinner. The older members, numbering 20, met on Wednesday, 31st ult., and the remainder on the following evening. Mr. John Cypher said it gave him pleasure to meet them under such pleasant circumstances, and referred to the good feeling that existed between them, mentioning that some of those present had been connected with the firm for upwards of a quarter of a century.

British Gardeners' Association.—At the last meeting of the Executive Council held at the R.H.S. Hall, Westminster, the Secretary reported that 38 new members had joined the Association since the last published report, bringing the total up to 835. One candidate for membership was not accepted by the council. Since the last meeting was held the rules, list of members with addresses, branches, &c., have been issued to all members of the Association. Certificates have also been issued to those who have paid their subscriptions for the year 1906. The Secretary, Mr. J. Weathers, 7, Talbot Road, Isleworth, Middlesex, will be glad if members when remitting their subscriptions will be good enough to acquaint him with any changes of address.

The Staffordshire County Council and Garden Education. — The Education Committee of the Staffordshire County Council has published a pamphlet respecting its scheme for gardening in public elementary day schools. It is intended to provide suitable practical teaching for country boys; and two years' experience having proved its value in some places, it is hoped that the scope of the scheme will now be enlarged. A general garden, or single plots are used, according to circumstances, and all are supervised by certificated teachers. The boys are encouraged to note the weather, birds, insects, and other surroundings, as well as the crops before them. The satisfactory results already obtained encourage the committee to continue their work. The report is drawn up by Mr. Graham Balfour, Director of Education, and by Mr. A. W. Brown.

Potatos.—Messrs. Sutton & Sons inform us that on Tuesday next, February 13, on the occasion of the annual meeting of the Royal Horticultural Society, they will exhibit a collection of Potatos containing features of special interest. Included in the collection will be specimen tubers of many original wild species and types, some of which, so far as they are aware, have never been exhibited in this country.

The Gardeners' Royal Benevolent Institution.—We are informed that Lord Balfour of Burleigh (President of the Royal Caledonian Horticultural Society, Edinburgh, and Member of the Council of the Royal Horticultural Society) will preside at the 67th anniversary festival dinner at the Hotel Metropole on Wednesday, June 13, in aid of the funds of this institution.

Manuring of Hops.—Dr. Bernard Dyer obligingly furnishes us with a summary record of his experiments on the manuring of Hops during the last ten years at Mr. Shrivell's farm near Tonbridge. The general results of the experiments appear to justify the conclusions already expressed, namely, that even when the soil is otherwise liberally manured by autumn or winter dressings of dung, rape dust, fish guano, etc., 4 cwt. per acre of nitrate of soda, applied early in the spring, may be regarded as a safe and profitable dressing for Hops, even in a wet season; phosphates, of course, being used liberally at the same time, and potash salts if the land requires them. Such a dressing (4cwt. per acre) of nitrate of soda, it would perhaps be better not to exceed in the case of the more delicate varieties of Hops. If, however, neither dung nor any other nitrogenous fertiliser has been recently applied, there appears to be no reason to anticipate that 6 cwt. per acre of nitrate of soda would be otherwise than safe, even for delicate Hops; while for freely growing and heavily cropping varieties as much as 8 cwt. per acre might be used. But a more miscellaneous manuring, including moderate dressings like 4 cwt. per acre of nitrate of soda would probably commend itself to most growers. It is not desirable that nitrate of soda should be put on late in the season, as is sometimes done, since this appears to tend to delay the ripening of the Hops.

Sugar in Queensland.—An old correspondent writes in a letter received a few days ago that "the young cane (sugar) and ratoons are looking well, and if we get rain about the usual time there will be another grand season; but drought may upset all our calculations. A farmer close to me is cutting 45 tons to the acre. The sugar mills are all busy, and will have a very profitable season."

Musa.—From the Royal Botanic Gardens, Kew, has been issued what we take to be a reprint of certain articles previously published in the *Bulletin* and elsewhere, on the species and principal varieties of Musa. Mr. Baker's monograph of the species, 35 in number, has been incorporated to a large extent. In addition, there is a great variety of miscellaneous information relating to varieties, their culture, uses, geographical distribution, and the like. The volume is, in fact, an encyclopædic summary of what is known concerning Musas, and will be very useful for reference. A few illustrations and a sufficient index are provided.

"Electros."—We are very frequently asked to sell, or to lend, electros from our blocks, but, unless under special circumstances, we do not sell or lend our blocks if they are to be used for commercial purposes. The next question asked is where can I procure the electros I want? This question has hitherto been difficult to answer. It is rendered much more easy now by the publication, by Messrs. Watkins and Simpson, wholesale seed merchants, of Tavistock Street, Covent Garden, of an "electro album" devoted to the illustration of types of vegetables and hardy or half-hardy flowers. Those desirous of illustrating their catalogues with accurate representations will find this album very serviceable. County Council lecturers and others engaged in educational work will also find it of value to them.

"L'Art de Forcer."—M. Van den Heede supplies for the benefit of French readers a handy little treatise on the "Art of Forcing." It is to be had from M. Charles Amat, Rue Cassette 11, Paris. It deals with forcing in general, its importance and value, the best methods of carrying it out, the processes of retarding by cold, the application of ether or chloroform, an enumeration of the most useful plants for forcing purpose, and a variety of details of importance to those who engage in this work. In his preface M. Van den Heede gives some interesting particulars of the practice of forcing in France from the time of Olivier de Serres (1513-1619) to the present time, when forcing not only supplies luxuries for the rich as in bye-gone times, but is a commercial industry on a vast scale, in the benefits of which the poorest have their full share.

Gloire de Lorraine.—We have received a photograph from Mr. C. P. Lamb, the gardens, Pinkney Park, Malmesbury, showing three excellent plants of Begonia Gloire de Lorraine, cultivated there for Lieut-Col. Turnor. The specimens measured 3 feet in height and 3½ feet in diameter. We should have been tempted to reproduce the photograph but for the fact that his popular Begonia has been already figured on several occasions in these columns.

A New Propagating House.—In the current number of *Revue de l'Horticulture Belge* is an account of a new propagating house erected by M. Buyssens at Vilvorde. It is simply a glass box, raised on three layers of bricks. The roof is nearly flat, with only just sufficient slope from the ridge to carry the water off. The lights at the ends, as well as at the sides, are 1·50 metre (5 feet) long by 0·81 in breadth (about 32 inches), so that a maximum of light is ensured. The stages on which the plants are placed can be raised or lowered at will by appropriate mechanism so that the plants on an upper stage can be placed as near the glass as necessary, and lowered when watering or other operations are required. At the same time there is abundance of room and light for a second stage beneath the upper one. The lights, being inserted in grooves without putty, can easily be removed for painting, cleansing, or repairing the rafters, or they can be removed altogether during the summer. We are not told what provision is made for ventilation.

A New Vegetable.—M. Barial, of 3, Boulevard de l'Ouest, Le Raincy, Seine et Oise, France, announces a new vegetable under the name of "Helianthi," or American Salsafy. According to the illustrations which have reached us, this is none other than the tuberous stolons of some species of Helianthus unnamed, but evidently akin to H. rigidus. The foliage is also recommended for forage.

Botanic Gardens.—We have received a copy of the exchange seed list issued by the Imperial Botanic Garden, St. Petersburg. In addition to the general enumeration there are special lists containing the names of plants obtained from Turkestan, the Caucasus, and various Russian provinces. The names are in Latin. The Director is Prof. Dr. Fischer de Waldheim, to whom application should be made before March 1.

Linnean Society.—The next meeting will take place on Thursday, February 15, 1906, at 8 p.m., when the following papers will be read:—"The Structure of Iris hippuris" (Linnæus), by J. J. Simpson; "Note on the Geographical Distribution of the Genus Shortia" (Torr. and Gray), by W. B. Daydon Jackson, Gen. Sec. L.S.; "Exhibitions": Dr. H. Charlton Bustian, F.R.S., F.J.I.; "Developmental Changes in Zooglœa" (with lantern slides).

The First County Park System.—A book, written by Mr. Frederick W. Kelsey, claiming to be a complete history of the inception and development of the Essex County parks of New Jersey has lately been published. The author was a member and vice-president of the first Board of Commissioners selected to lay out the parks, and in ten years has seen them succeed and develop to a most satisfactory extent. The facts are candidly stated, and should interest all who know the grounds, and be of use to future workers in similar fields. Illustrations brighten the pages, and afford evidence of the attractiveness claimed for these recreation grounds and gardens. The book deals with the inception of the enterprise, and reflects the smooth course of progress "until the blighting influence of special interests and of practical politics were injected into the undertaking."

Flowers in Season.—From Messrs. Webb and Sons, Stourbridge, we have received some flowers of their strain of florist Primula. Avalanche is white, of large size, and possesses frilled florets. Meteor is also large, and the colour is of pale salmon-rose. Others sent are Ruby Queen (ruby), Eclipse (purplish-crimson), and a rose-coloured seedling.

Horticultural Club.—The annual dinner of the Club will be held on Tuesday, February 13, at 6 p.m., at the Hotel Windsor. Ladies are specially invited. After dinner there will be music by the "Quavers" Vocal Quartette, under the direction of Mr. Wilfred Kearton, of St. George's Chapel, Windsor Castle. The annual meeting will take place at 5 p.m., and it is hoped that all interested in the club will be present.

National Rose Society.—A meeting of the General Purposes Committee will be held at the Westminster Palace Hotel, Victoria Street, Westminster (not at the Windsor), on Tuesday, the 13th inst., at 2 p.m. Agenda: To draw up Schedule for the Royal Botanic Gardens Show, "The Rose Annual" and other business.

Messrs. Protheroe & Morris.—The Central Cricket Club (in connection with the firm of Messrs. Protheroe & Morris) held their second annual smoking concert at "Stone's," Ludgate Hill, on Monday evening last. Mr. J. B. Slade was in the chair, and there was an attendance of about 85, including Messrs. Carter, James, and Seymour (former members of the staff), the employees, and their friends. The programme lasted for 4½ hours, the chief items of interest being songs, musical sketches, &c., by Mr. Wyatt, Mr. George Pritchard, Mr. Cox, Mr. Alf. Amis, Mr. H. Bowers, Mr. Goddard, and Mr. Seymour. The toast, the "C. C. C.," was given by Mr. Slade, who presided in his well-known genial manner, and was replied to by Captain Humphrey in suitable words. The entertainment was a great success.

Royal Horticultural Society. — The society's annual examination in the Principles and Practice of Horticulture will be held on Wednesday, March 28, 1906. Candidates should send in their names not later than March 1. Full particulars may be obtained by sending a stamped and directed envelope to the Society's Offices, Vincent Square, Westminster, S.W. Copies of the questions set from 1893-1905 (price 1s. 9d. or 10s. a dozen), may also be obtained from the office. The society is willing to hold an examination wherever a magistrate, clergyman, schoolmaster or other responsible person accustomed to examinations will consent to supervise one on the society's behalf. In connection with this examination a scholarship of £25 a year for two years is offered by the Worshipful Company of Gardeners, to be awarded after the 1906 examination to the student who shall pass highest if he is willing to accept the conditions attaching thereto. The main outline of these conditions is that the holder must be of the male sex, and between the ages of 18 and 22 years, and that he should study gardening for one year at least at the Royal Horticultural Society's Gardens at Wisley, near Ripley, Surrey, conforming to the general rules laid down there for students. In the second year of the scholarship he may, if he like, continue his studies at some other place at home or abroad approved by the Master of the Worshipful Company of Gardeners, and by the Council of the Royal Horticultural Society. In case of two or more eligible students being adjudged equal, the council reserve to themselves the right to decide which of them shall be presented to the scholarship.

The Forest Flora of New South Wales.—Mr. J. H. Maiden has now completed part 8 of the second volume of this useful work (part xviii of the complete publication). The species herein considered are the following:—Flindersia Schottiana, Eucalyptus regnans, or Giant Gum Tree, and Casuarina tuberosa, or Black She-Oak.

Publications Received.—Select list of works prepared at the Royal Botanic Gardens, Kew, &c., &c.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Hippeastrums (Amaryllis) at Tring Park.—The Right Hon. Lord Rothschild has for some years past taken great interest in perfecting the fine strain of Hippeastrums in his gardens at Tring Park (gr. Mr. Arthur Dye). As each successive batch of seedlings has flowered marked improvements have been disclosed until at the present time the magnificent show of flowers in the Tring Park Gardens seem to indicate that in some of the sections the best quality possible has been obtained. The production of large flowers of considerable substance and equally broad segments were the first objects in developing the strain, preference being given to the forms which displayed but little green in the centre, and to those which produced four flowers on a spike all open at the same time. The batch now in bloom came chiefly from two of the best of the Tring Park strain, viz., King Edward VII. and St. Frusquin. There are several distinct sections, the favourite being one with massive flowers of a brilliant dark scarlet. The lighter strain has very large white flowers variously striped with scarlet, and a very attractive class has the bright red flowers with a broad white margin. Two of the finest pure white varieties were obtained a few years ago, and two or three good white forms raised from them now in bloom will develop into better flowers than the parents. A large number of bulbs in another house are just sending up their spikes, so the display will continue for a long time. *J. O. B.*

The Flannel Flower of Australia (see enquiry by J. G. G., p. 80).—This is Actinotus Helianthi. *C. Bennett, Hall Green, Birmingham (late of Sydney, N.S.W.).*

The Late Harrison Weir and Bullfinches.—The recent death of Mr. Harrison Weir reminds me of some correspondence that passed between us some years ago respecting the Bullfinch. I had sent a note to the *Gardeners' Chronicle* describing the nuisance that these birds occasioned, and complaining that they had visited the gardens of which I had charge. I stated that on the choicest trees, every fruit bud had been carefully dissected, and that, owing to the Bullfinches' audacity, I had been enabled to "pick off" a large number of them. A few days later I received a gentle chiding from Mr. Weir for employing such measures against the birds, and he assured me they did a vast amount of good in destroying innumerable insects. That was their mission, they instinctively knew that these pests lurked beneath the scales, &c. My reply was that no one took greater interest in birds than myself, and that for years I had kept a number in a spacious aviary, but I utterly failed to comprehend what advantages accrued from their visits to the bushes when they removed every fruit bud. Most gardeners in the country are well aware of their destructive capabilities. In some gardens they are but seldom seen, and doubtless the presence of extensive woodlands and game coverts in close proximity to the gardens under notice would account for their unusual numbers. The gardener in an adjoining estate found it necessary to cover all his fruit trees with wire netting, a perfect square being formed round each tree. *Walter H. Aggett, Supt., Public Gardens, Bermondsey, S.E.*

Apple Charles Ross.—It is disappointing to learn from some growers of this new Apple, one that at the outset gave such rich promise of excellence, that with them the fruits have been of inferior merit. But whilst there could be no question that the fruits first exhibited to the R.H.S. Fruit Committee by Mr. Ross, and probably from the seedling tree, were of rich flavour and undoubted excellence, so also were the fruits to which the first prize was awarded in the class for any other dessert Apple at the great show of British fruit held last October. In that case the fruits were not exceptionally large, but were so richly flavoured and good as to evoke from myself and my fellow judges the highest praise. These two instances show that the Charles Ross Apple has qualities that growers, so far, have largely failed to bring out. It would be interesting to learn from the grower of those first prize fruits the conditions of their production. My impression is that as the variety being new has so far fruited on young trees only (except perhaps in a few cases where worked on old trees), the fruits have suffered in quality because the trees have been rather overfed, resulting in the production of large fruits. The more they approached in size those of one parent, Peasgood's Nonsuch, they naturally lacked the richer flavour and excellence found in the fruits of the other parent, It will be no matter for surprise to find Charles Ross producing from elderly trees, and especially orchard-standards, fruits of that rich excellence which, though smaller in size, marks the fruits of Cox's Orange Pippin so grown. From such trees I have invariably found the fruits to be of richer flavour, just as is found also in fruits of Blenheim Pippin. It will then be found that in granting Charles Ross a F.C.C. the Fruit Committee did not make the mistake usually charged upon it.—*A. Dean.*

Winter-flowering Carnations.—There being much interest shown in winter-flowering Carnations at the present time, and particularly in the newer American varieties, I am sending a few blooms with this note. My experience with them has shown these varieties to be valuable acquisitions to our winter-blooming Carnations. Enchantress, perhaps one of the best known of the group, is a lovely variety of a popular shade of pink colour. Halowarden is a very large crimson flower and a strong grower. Lady Bountiful, pure white, is magnificent; the flowers are of large size, and the plants bloom very freely. Royalty is of salmon-pink colour, a good variety, but not so robust here as most others are. Nelson Fisher is a most effective colour after the manner of Mrs. T. W. Lawson, but deeper in shade. Reliance, pure white, at present is not so good with us as Lady Bountiful. Dorothy Witney is quite a new colour in the tree section, being yellow, striped with pink, very rich indeed; the flowers are of perfect form, but hardly so large in size as those of some other varieties. Her Majesty, white with faint rose stripes, is a beautiful bloom, but is not a very strong grower with us at present. Of the older varieties, Mrs. T. W. Lawson is one of the very best, strong and healthy in its growth, producing plenty of good blooms on long, stiff stems. Mrs. S. J. Brooks, pure white, is a splendid companion for this, and succeeds remarkably well here. Floriana, another fine variety, is of a pleasant shade of pink colour; the flowers are of good size, and the plants grow well. Alpine Glow is also a good shade of pink colour. A point in favour of the newer varieties is the long, stiff stems, which make them doubly valuable for decorative purposes, and I believe that they will be much favoured where the best Carnations are grown. *J. G. Weston, Eastwell Park Gardens, Kent.* [The flowers sent by our correspondent are exceedingly bright and pleasing.—Ed.]

Chrysanthemum Baron de Vinols.—I noticed the remarks of *C. H. P.* under the above heading on p. 51. This variety is synonymous with Caprice du Printemps, which has been largely grown for decorative and market purposes in this country for several years past. A sport from it, Kathleen Thompson, received an Award of Merit from the Royal Horticultural Society in the autumn of 1904, and judging from the description of Mme. George Barré in a French catalogue, I think this variety is synonymous with Kathleen Thompson, thus showing that the parent, Caprice du Printemps, has given similar sports on both sides of the Channel. *I. G.*

To Brighten Beds of Azaleas and Rhododendrons.—*F. M.*, according to his note on p. 46, would, if permitted, make a good jungle planter; for his style of planting is in very bad taste, as all plants such as he names have a beauty of their own at all seasons of the year. Azaleas are crimson and gold in the autumn. Fancy Rambler Roses and Scotch Roses in a Rhododendron bed! A Scotch Rose, like a Scotchman, once well planted, wants plenty of room and a lot of shifting. *R. M., Garden City, January 22, 1906.*

Cystopteris fragilis sempervirens.—By the courtesy of Mr. Somerville of Glasgow I have recently received several fronds of a form of Cystopteris fragilis, found in Scotland by Mr. William Young of Kirkcaldy, which appear to answer to the description of the sempervirens form of the species described by Mr. Britten in page 23 of his "European Ferns" as being a native of Madeira, except perhaps as regards the greater size of the anterior basal pinnules "and the glandular hairy vestiture of the indusium which is conspicuous in the fresh plant." The sempervirent character, however, is abundantly shown by the fact that I have just received (Jan. 31) perfectly green fronds taken by Mr. Young from his plant under glass, while the ordinary C. fragilis is deciduous, dying down entirely in the autumn. Mr. Young's plant is furthermore distinguished by its very robust growth, the fronds attaining 18 inches in length as is shown by the accompanying specimen, while as a rule I have never seen the fronds more than half that size. Under the above circumstances I consider that Mr. Young is perfectly justified in considering his find to be really C. fragilis var. sempervirens, of which previous finds in this country appear to have been doubtfully recorded. *Chas. T. Druery, V.M.H. F.L.S.*

Iris tuberosa.—The snake's-head Iris, mentioned by Capt. Pinwill in his note on page 78, is apparently not very exacting in its requirements in the south-west. Capt. Pinwill writes of an old group doing well in a shady wood. With me this Iris prospers under very different conditions, for a colony growing in the full sunshine in the open on a southern slope, that becomes dust dry in hot summers, never fails to flower well. That it does not flower freely in all portions of the Kingdom may be gathered from the notes of correspondents resident in divers localities in England and Scotland. In South Devon it is, in one place, to be found growing in a quasi wild condition in the hedgerow. It is a quaint and soberly pretty flower with its pale green standards and velvet-black falls, and has the additional merit of fragrance. The quadrilateral foliage is also curious. In Italian gardens it goes by the name of La Vedovina, the Little Widow. *S. W. Fitzherbert.*

Fifteen Pounds Annual Rent per Acre from Timber Trees.—I believe that a crop of houses in any large manufacturing town will give a bigger return than that which Mr. Simpson quotes (for forest land) on page 78. But *The Forester*, by Dr. Nisbet, states that by a judicious selection of exotic forest trees and also by manuring the ground thoroughly, these trees will pay. Will, however, the extra cost in plants above that of the native or semi-native species pay as well for what seems to be the uses to which timber will in future be put, namely, for the making of sleepers, wood-wool, etc.? *Alec. D. Berney, Stanwix, Carlisle.*

Nicotiana Sanderæ.—In reference to Mr. W. H. Diver's note on p. 76 respecting Nicotiana Sanderæ continuing to flower in so low an atmospheric temperature as 45° to 55°, I may say that I have at the present time plants that have been in flower since September last, and they have still flowers of a good shade of colour and satisfactory foliage. I intend growing more of this plant another season, as I have a house 130 feet long to keep filled with flowering plants. The atmospheric temperature averages from 45° to 55°. It is quite possible to have Nicotiana Sanderæ in flower all the year round. *W. G. Edwards, Plymouth.*

Hazel in Bloom.—With reference to your record on p. 72 I noted a nut bush, "Prolific Cob," had expanded female flowers on December 27 last. It was planted on January 29, 1905, and flowered after, so this plant has flowered twice in one year. The plant is fully exposed to the weather in an open orchard, not even a line fence to screen the wind. I noted several male flowers in the hedgerows prior to this. *Cymru, Castle-Caereinion, Welshpool.*

The Fern Paradise.—As the criticisms of your reviewer of my "Fern Paradise" are, perhaps unconsciously, unfair, I ask you to favour me with a brief reply. The writer of your "notice" has missed the "point" or object of the book, which is to serve as "a plea for the culture of ferns." This, in fact, is its plainly-written sub-title. It is not intended for expert botanists; it is not designed to convert those who are already converted; it has a "mission" which has been very largely accomplished. Special mention of detailed "varieties" was purposely excluded, as no one knows better probably than your contributor that the simple purpose of the volume would have been largely defeated had it been overloaded with descriptions of the multitudinous number of departures from normal forms. That is the purpose of another book now preparing. With due deference to your contributor, I maintain that "ferns are seed-bearing plants." Spores are seeds, though seeds are not always spores [?]. I also maintain that "many ferns" (I do not say species of ferns) "that grow in Devonshire are never seen in other counties." *Francis George Heath, Underwood, Kew Gardens.*

SOCIETIES.

ROYAL HORTICULTURAL.

The following extracts are taken from the report of the Council to be presented at the one hundred and second annual meeting on Tuesday, February 13, at the Hall in Vincent Square:—

The One Hundred and Second Year.

The year 1905 has been one of development and steady progress in every direction of the Society's manifold operations. The new hall and the new garden at Wisley have both demanded much and careful consideration, and it is satisfactory to note that each of them has far exceeded the most sanguine expectations of their suitability for the Society's purposes.

The Finances.

The attention of the Fellows is directed to the satisfactory position of the Society, not only as regards its present resources and the number of Fellows, but also in respect to the largely increased privileges of the Fellows and the greatly augmented general work of the Society for the promotion of practical and scientific horticulture. As will be seen from the balance-sheet, the Society has invested £18,430 in public securities; the hall, with its equipment and furniture, represents at least £41,000; and the works already executed at Wisley have cost over £5,600. All these are genuine assets to the credit of the Society; and, despite the increased necessary expenditure at Vincent Square compared with that at the Drill Hall, the credit balance on the year's working is £6,203.

[The financial statement, we may mention, shows a credit balance for the year of £6,203. The Temple Show was a great success; the Chelsea Show, in spite of the attractiveness of the locality, entailed a loss of nearly £500. The receipts for letting the hall, when not required for horticultural purposes, amounted to over £700. The sale of the Chiswick lease brought in £4,673. The new hall has cost about £38,924; dwelling-houses at Wisley, £2,236; glasshouses at Wisley, £3,295. The approximate value of the investments is £16,811.]

Deputations.

The Society was represented at the great International Horticultural Show at Paris in May, 1905, by Sir Albert Rollit, Bart., Major Holford, C.I.E., C.V.O., Mr. J. Gurney Fowler, Mr. Harry J. Veitch, F.L.S., and the secretary, who were empowered by the Council to award the Society's medals to exhibits of conspicuous excellence. As a slight acknowledgment of the gracious reception accorded to the deputation by the President of the Republic and Madame Loubet, the Council presented him with the Society's Flora medal in gold suitably inscribed, with which Monsieur Loubet expressed himself as being much gratified.

Another deputation consisting of the President, Mr. George Bunyard, V.M.H., Mr. James Hudson, V.M.H., Mr. A. H. Pearson, Mr. H. B. May, Mr. H. J. Veitch, F.L.S., and the secretary, visited the International Horticultural Exhibition at Edinburgh on September 13th, when medals were also awarded, and the deputation met with every kindness and attention.

The Council.

In the spring of 1905, the Council heard with the deepest regret that, owing to the state of his health, Baron Schröder was unable to continue to occupy his seat on their board. As this decision was definite, the Council would, had it been possible, at once have invited the

Fellows to put so honoured a name on the list of vice-presidents of the Society, but as it was found that this could only be done at an annual meeting, they had no choice but to postpone it till the present occasion when they are confident that the heartiness of the vote of the Fellows will be in no way affected by the unavoidable delay. Baron Schröder's services to the Society and to horticulture generally are such as will ever make his name respected and beloved by all gardeners and plant lovers who will, one and all, join in wishing that he may enjoy many years of rest in his retirement.

A very heavy loss to the Council and to the Society—as indeed to many other public institutions—was experienced towards the close of the year by the death of the Rt. Hon. the Earl of Ilchester, who took the liveliest interest in the welfare of the Society, and only quite recently he had again given permission for the show to be repeated on July 10th and 11th, 1906, a privilege which has since been most kindly confirmed by the Dowager Countess of Ilchester.

Retiring Members of Council.

Under bye-law 60 the three members of Council who have been longest in office retire each year but are eligible for re-election. The three thus retiring this year are Major Holford, C.V.O., C.I.E., Mr. H. B. May, and the Hon. W. F. D. Smith, M.P., who was appointed by the Council to sit in the place of Baron Schröder; there is also the vacancy caused by Lord Ilchester's death to be filled.

Victoria Medal of Honour.

During the past year five of the oldest and most respected holders of the Victoria Medal of Honour in Horticulture have passed away in the persons of Mr. William Paul, of Waltham Cross; Mr. Richard Dean, of Ealing; the Rev. H. Honywood D'Ombrain, of the National Rose Society; Mr. F. W. Burbidge, of Trinity College, Dublin; and Mr. Henry Eckford, of Wem, to whom we owe so many of the most beautiful Sweet Peas.

Annual Progress.

The following abstract will show the Society's progress in regard to numerical strength during the past year:—Loss by death in 1905, 94, £113 8s.; loss by resignation, etc., 485, £573 6s.—total, 579, £686 14s. Fellows elected in 1905, 1,330, £1,964 0s. 6d.; deduct loss, £686 14s.—nett increase in income, £1,277 6s. 6d. New Fellows, etc., 1,330; deduct resignations and deaths, 579; numerical increase during the year 1905, 751. The total number of Fellows, members, associates, and affiliated societies is now 9,111.

Journal.

The *Journal* continues to maintain its position in the esteem of the Fellows, and its high rank among the publications of the scientific societies of Europe and America.

Editorship.

The rapid increase in late years of the general work of the Society has rendered it impossible for the secretary to continue to act also as editor of the *Journal*, and the Council have pleasure in announcing that they have secured the services of Mr. George S. Saunders, F.L.S. (son of that staunch supporter of the Society, the late Mr. Wilson Saunders, F.R.S.), to take over the superintendence of this part of the Society's work.

Pamphlets.

The second edition of that most useful pamphlet on "Rules for Judging and Hints to Schedule Makers" which was first published in 1896, having become exhausted, a third, and greatly amended edition has been issued. A newly revised edition of the popular pamphlet on "Varieties of Fruits for Cottagers, Small Farmers and Private Gardens" has also been published with additional notes on root-pruning, etc., and the whole has been brought up to date. A new edition of the list of Orchid awards given by the Society from 1859 to December 31st, 1905, has also been prepared, and Fellows can be supplied with it on application at a cost of 5s., which is much less than the cost of production.

Examinations.

The Society's thirteenth annual examination in the Principles and Practice of Horticulture was held on April 12th, 1905, when 160 candidates entered, and the result will be found in the *Journal* (Vol. xxix., pages 688-692).

The examination will be again held on Wednesday, March 28th, 1906, at as many centres as may be necessary to suit the convenience of candidates.

The examination in cottage and allotment gardening for elementary and technical school teachers only, which was held for the first time in 1904, was repeated on April 5th, 1905, when 139 entries were received as against 124 in 1904. In order to further encourage the candidates in this examination, the Council have decided that those who pass in the first class, and desire to become Fellows of the Society, shall be exempted from the payment of the entry fee, a privilege hitherto confined to working gardeners earning their living thereby, and Fellows permanently resident outside the United Kingdom. This examination will again take place in London and at other centres in the provinces on Wednesday, April 11th, 1906.

In compliance with a request from certain county council authorities, the Council of the Society consented to hold a special examination on January 11th, 1906, for gardeners employed in the London and other town public parks and gardens.

Local Societies.

A scheme for the affiliation of local horticultural and cottage garden societies was put forward in 1890, and more than two hundred local societies have availed themselves of it. They have caused a new medal to be struck which is only to be used by affiliated societies, and which is supplied to them at cost price. The affiliated societies have also many other privileges, particulars of which may be obtained from the office.

Information.

The Council note with much satisfaction that the number of Fellows seeking information from the Society's officers continues to increase rapidly, and some thousands of answers have been given to enquiries of every description.

The Society's Hall.

The new hall has exceeded the most sanguine expectations of the Council and Fellows, both in respect of its suitability for the Society's purposes and of the demand for hiring it by other societies and individuals. The past year has been one of completion, improvement, and development. Various minor defects and faults have naturally been discovered, and these have been, or are being, corrected. A stepped platform-superstructure has been made for orchestral performances, which is almost identical with that formerly used at St. James's Hall.

Legacies and Gifts to the Hall.

Two very welcome bequests have been received during the past year, one of £250 under the will of the late Mrs. Begley, of St. Peter's Square, Hammersmith; the other of £50 under the will of the late Mr. J. Cohen, of St. Mark's Crescent, Regent's Park. The Council venture to remind Fellows of this way of handing on the benefits and enjoyment of the Society to future generations.

Various other gifts have been received, including a handsome clock for the Council chamber from Lady Macleay, in memory of Sir George Macleay, of Pendell Court; a microscope, for the use of the Scientific Committee, from Mrs. H. H. France-Hayhurst; and another for use at Wisley from General Sir Henry Yorke, K.C.B. Sir Trevor Lawrence, Bart., President of the Society, has also presented two additional high power object lenses for each of the microscopes.

Letting.

In issuing the regulations for letting the hall and other parts of the building, the Council adopted a liberal policy. They further decided to make considerable reductions to charitable institutions and horticultural societies. This policy has resulted in the hall becoming popular with lessees, who have in several cases desired to hire it annually, and have recommended it to their friends, so that no less than £700 has been received during the first year 1905.

The Library.

The whole of the books in the library have been cleaned and put in order at the sole charge of Baron Schröder, V.M.H., and the Council have caused a brass tablet recording the fact to be erected in the Library. The Veitch Memorial Trustees have also made a donation of £50 towards the funds of the [Lindley] library.

Shows in 1906.

The shows during the past year have numbered 27, occupying 36 days in all; and already 33 shows have been arranged for 1906, lasting over 42 days. These include 24 fortnightly meetings, one Home-Grown Fruit Show, three Colonial-Grown Fruit Shows, one Special Show of Table and other Decorations, and the Annual Shows of Sweet Peas, Carnations, Autumn Roses, and Potatos, to which the Council have arranged for Fellows' tickets to admit.

The Temple Show.

By the kindness of the Master and Benchers, the Society was able to hold its great show of flowers, for the eighteenth year in succession, on May 30th and 31st and June 1st in the gardens of the Inner Temple, and, despite the extremely unsettled weather, both the exhibits and the attendance exceeded the average of the last few years. Arrangements have been made for the show to be held on May 29th, 30th, and 31st, 1906.

The Summer Show.

By the kind permission of the Lords Commissioners the Great Summer Show of 1905 was held in the grounds of the Royal Military Hospital, Chelsea. Only a short time before his death the late Earl of Ilchester again most kindly placed Holland House Park at the Society's disposal for the 1906 Summer Show, on July 10th and 11th.

Fruit and Vegetable Show.

The Society's twelfth Annual Show of British-Grown Fruit was held in the Hall on October 10th, 11th and 12th; a Show of Home-Grown Vegetables on October 24th; and a special exhibition of Home-Grown Bottled and Preserved Fruits on December 5th and 6th.

Colonial Fruit Shows.

Two further shows of Colonial Fruit and Vegetable products in succession to that on December 13th and 14th, 1904, have been held, on March 30th and 31st, and December 5th and 6th, 1905. The interest taken in these has led the Council to arrange for similar shows on March 22nd, 23rd, and 24th, June 6th and 7th, and December 4th and 5th.

Kindred Societies.

The following shows were held by kindred societies in connection with certain of the Society's fortnightly exhibitions in 1905:—April 25th.—National Auricula and Primula Show. May 23rd.—National Tulip Show. July 4.—National Sweet Pea Show. July 18th.—National Carnation and Picotee Show. Sept. 26th and 27th.—National Autumn Rose Show.

These societies will continue to hold their shows at the Hall, but they will not in future take place on days fixed for the Royal Horticultural Society's own exhibitions. The Council have, however, made arrangements by which R.H.S. tickets will admit to these Kindred Societies' Shows.

Conference of Fruit Growers.

In connection with the show of British-Grown Fruit, a conference on fruit growing was held by the Society in conjunction with the National Fruit Growers' Federation on October 10th, 11th, 12th. The conference attracted considerable attention and was well attended. The papers read, and a complete illustrated report of the discussion, will be published as a separate volume of the Society's *Journal* early in the spring of 1906.

Special Orchid Classes in 1906.

At the suggestion of the Orchid committee the Council have adopted a scheme, which they hope will have the effect during the ensuing year of including Orchid growers, both large and small, amateur and professional, to exhibit their already certificated and other choice varieties at the fortnightly shows of the Society. Without in any way wishing to alter or curtail the exhibits as at present shown, *which they hope will be continued exactly as they are now*, they propose to award additional diplomas to plants of exceptional merit staged in one group. This group will be composed of all the exhibits duly entered for this special competition in accordance with the schedule. They hope that by this means groups may be brought together representing as far as possible all the varieties of the particular species decided upon for exhibition on each occasion, together with the hybrids having that species as one of their parents. At the same time the Society's paintings of the species, and hybrids therefrom, to which awards have already been given, will be exhibited. They believe that these exhibits will have a great educational value to hybridists, orchidists, and the Fellows generally, and they rely upon all Orchid growers to assist them in making the exhibit as complete as possible.

International Conference on Plant Breeding.

Very successful conferences on plant breeding, whether by hybridisation or by cross-fertilisation, have been held already, one in London under the Society's auspices in 1899, and a second in New York under the auspices of the Horticultural Society of New York, U.S.A., in 1902. A third has now been arranged by the Council to take place in London, commencing on July 30th, and concluding on August 3rd, 1906.

It is felt that such conferences afford an unusually good opportunity for scientific and practical men to become acquainted with each other's methods and ideas, and it is hoped that representatives of both classes of students will respond to this invitation to take part in the proceedings.

Wisley.

The new garden, which was so generously presented to the Society by Sir Thomas Hanbury, V.M.H., K.C.V.O., is gradually getting into thorough working order. Fine collections of flowering shrubs have been received from the Director of Kew Gardens, and from the leading nurserymen; and representative collections of Roses have also been given by the principal Rose growers. Much, however, still remains to be done as soon as the state of the finances will permit.

Mr. George Massee, V.M.H., has kindly undertaken some original research work in the garden, especially regarding the possible transference of the Hazel-bud-mite to the Black-currant, which, when completed, will be published in the Society's *Journal*. The want of a properly-equipped research station is becoming daily more acutely felt.

The number of visitors to the Gardens admitted by Fellow's tickets during the year 1905 amounted to 5,250. This number is exclusive of horticultural parties, which were admitted by special arrangement, and would bring up the total to over 6,000.

Students.

Students are admitted to Wisley for a period of two years, and are trained in practical horticulture. Some of them also attend the Society's lectures and shows in the new hall and elsewhere. A small horticultural library is attached to the Gardens for their use. Every opportunity and encouragement is given to students, who use application, to master the whole of the general subject of practical horticulture, and as soon as a scientific department can be established, elementary science as it affects horticulture will be added to the curriculum. More than 90 per cent. of the old garden-students are doing well. The Council are quite unable to meet the applications for energetic, trustworthy young men, but they *must all be workers*. During the past year applications were received for 34 head gardeners, 7 single-handed gardeners, 12 foremen, 9 journeymen, and for many miscellaneous men, such as nursery foremen, landscape gardeners, propagators, &c. In the great majority of cases the applicants were supplied with suitable men.

The Meteorological Station.

The meteorological observations which were initiated in 1825 at the Chiswick Gardens, and are, therefore, the oldest series in the metropolitan area, are now being carried on at Wisley with a station which is regarded as one of the finest in the kingdom as regards both its situation and its equipment. The annual records are published in the Society's *Journal*.

Gifts to the Garden.

Besides the microscopes already mentioned, Mr. J. Willings has given a most useful waggonette.

Conclusion.

In concluding the report for the past year and the forecast for 1906, the Council feel that they may justly congratulate the Society on being the most prosperous Royal Scientific Society in the kingdom, the privileges of whose Fellows are in excess of those of any similar institution. At the same time they feel that what has been done in the past will be surpassed in the future, provided the Fellows do not relax their exertions, but rather make a renewed effort to wipe off the debt still remaining on the Hall, to complete the equipment of Wisley by the erection of a horticultural research station, and to increase the roll of Fellows to 10,000 by the end of the 102nd year of the Society, which closes on March 6th, 1906.—By order of the Council,

W. Wilks, *Secretary*.

NATIONAL CHRYSANTHEMUM.

Annual Meeting.

February 5.—The annual meeting of the members of the National Chrysanthemum Society took place on Monday evening last at Carr's Restaurant, Strand. Mr. C. E. Shea (President) occupied the chair, and there were present about 50 members. The report of the executive committee was presented, and on the suggestion of the chairman it was taken as read. We extract the following paragraphs:—

Extracts from the Report of the Executive Committee.

"Three exhibitions were held at the Crystal Palace in 1905. At the October Show the trade exhibits of early flowering Chrysanthemums and the floral decorations were most attractive features. Some very pretty exhibits of Dahlias, Begonias, etc., were staged in the Miscellaneous Section. In many classes at the November Show the competition was exceptionally keen. In the Decorative Classes some very fine exhibits were put up; and the Miscellaneous Section, consisting of groups of Chrysanthemums, retarded plants, etc., and some tables of Carnations made a very attractive exhibition. The December Show was a highly satisfactory one, the entries in some classes being considerably above the average.

"A Conference on Early Flowering Varieties was held in connection with the October Show, papers being read by Messrs. D. B. Crane, C. Harman Payne, J. W. Moorman, E. F. Hawes, G. Gordon, V.M.H. and E. F. Such. The attendance was highly satisfactory. The papers will be issued as a separate report by the Honorary Secretary, Mr. C. H. Curtis.

"Arrangements have been made with the Crystal Palace Company to hold three Exhibitions at Sydenham in the present year on the following dates:—October 3 and 4, November 7, 8 and 9, December 5 and 6.

"Following the success of the Exhibition of Market Crysanthemums at the Essex Hall in 1904, your Committee held a repetition at the French Flower Market, Covent Garden, by kind permission of his Grace the Duke of Bedford, which proved a great advancement, both in quality of the exhibits and in its arrangement. From a financial point of view it has also been successful, there being a satisfactory balance in hand.

"Six meetings of the Floral Committee were held during the season, three at the Essex Hall and three at the Crystal Palace. The number of novelties submitted to the committee has been largely in excess of that for many years past, and a higher standard of excellence has been maintained. Thirty-six First Class Certificates were awarded. The number of meetings for the present year is increased to seven.

"The Annual Dinner was held at the Holborn Restaurant on November 28, the President occupying the chair. A most enjoyable evening was spent by those present, who numbered over 100. Fruit and flowers were contributed by several members.

"In November the National Chrysanthemum Society received a special invitation to attend the International Autumn Show of Chrysanthemums, Fruit, &c., held in Paris by the National Horticultural Society of France, and several members attended, being honoured with prominent positions on the jury. A report of this visit will be found in the schedule.

"In recognition of the valuable services rendered by Mr. G. L. Caselton, Superintendent of the Crystal Palace, at the various shows, your committee, on the occasion of the annual dinner, presented him with the society's Gold Medal suitably inscribed.

"The society is in a satisfactory financial condition. The reserve fund amounts to £119 11s. 4d., of which £115 is on deposit.

"It is to be hoped that members will use their utmost endeavours to increase the membership during the present year."

On rising to move the adoption of the report, the President referred to the services rendered by the late Secretary, Mr. R. Dean, and said that as time continued to pass, and it became possible to make a retrospect, it would be more clearly seen how valuable Mr. Dean's services had really been. The committee invited criticism of the report, for it was necessary the society should advance, otherwise it must suffer, for in regard to such institutions there could be no standing still. Then Mr. Shea again referred to the subject of literature which he mentioned on the occasion of the annual dinner, and recommended that the society should publish a Year Book, or something of that nature, that would constitute a good return for the subscriptions obtained from country members who were not necessarily exhibitors. The effect of the adoption of such policy had very greatly benefited the Rose Society during the past three years. In regard to the schedule he would recommend the committee to have some new feature at their shows every year if possible. Mr. J. H. Witty seconded the motion for the adoption of the report and balance sheet, and the subject became open for discussion. Mr. Moorman did not wish to cause any alarm by the sounding of a pessimistic note, but he drew attention to the fact that the society owed a sum of about £119 7s. to its exhibitors, and he hoped an effort would be made to discharge this liability soon, even if the sum had to be taken from the society's deposit account.

The Crystal Palace Company owes the society a considerable sum of money, and Mr. T. Bevan (chairman of committee) and Mr. Taylor, treasurer, stated that they expected to receive this shortly, although all their efforts to obtain it had failed up to the present. In any case the exhibitors would be paid soon. The president recommended that the Crystal Palace Company should be threatened with proceedings. Mr. Taylor (an exhibitor) drew attention to the fact that a sum almost equal to the amount offered in prizes at the December Show had been spent in luncheons and refreshments for the committee and friends. He thought that the sum was larger than it should be. Mr. Bevan explained that non-competitive exhibitors were invited to lunch on the Show day, and he thought the policy a good one.

Mr. Williams (Ealing) complained that amateurs were pitted against tradesmen in the class for a decorated table, and that the committee still looked for its judges amongst members of the society rather than select persons who were not members.

After a vote of thanks had been passed to the auditors, Mr. C. Harman Payne, referring to the conference on early flowering Chrysanthemums which was held in October, said that much of the success of that event was due to Mr. C. H. Curtis, who had acted in the capacity of honorary secretary. The committee therefore recommended that a Silver Medal be given to Mr. Curtis as a souvenir of the conference. This medal was then handed by the President to Mr. Curtis.

The Question of General Secretary.

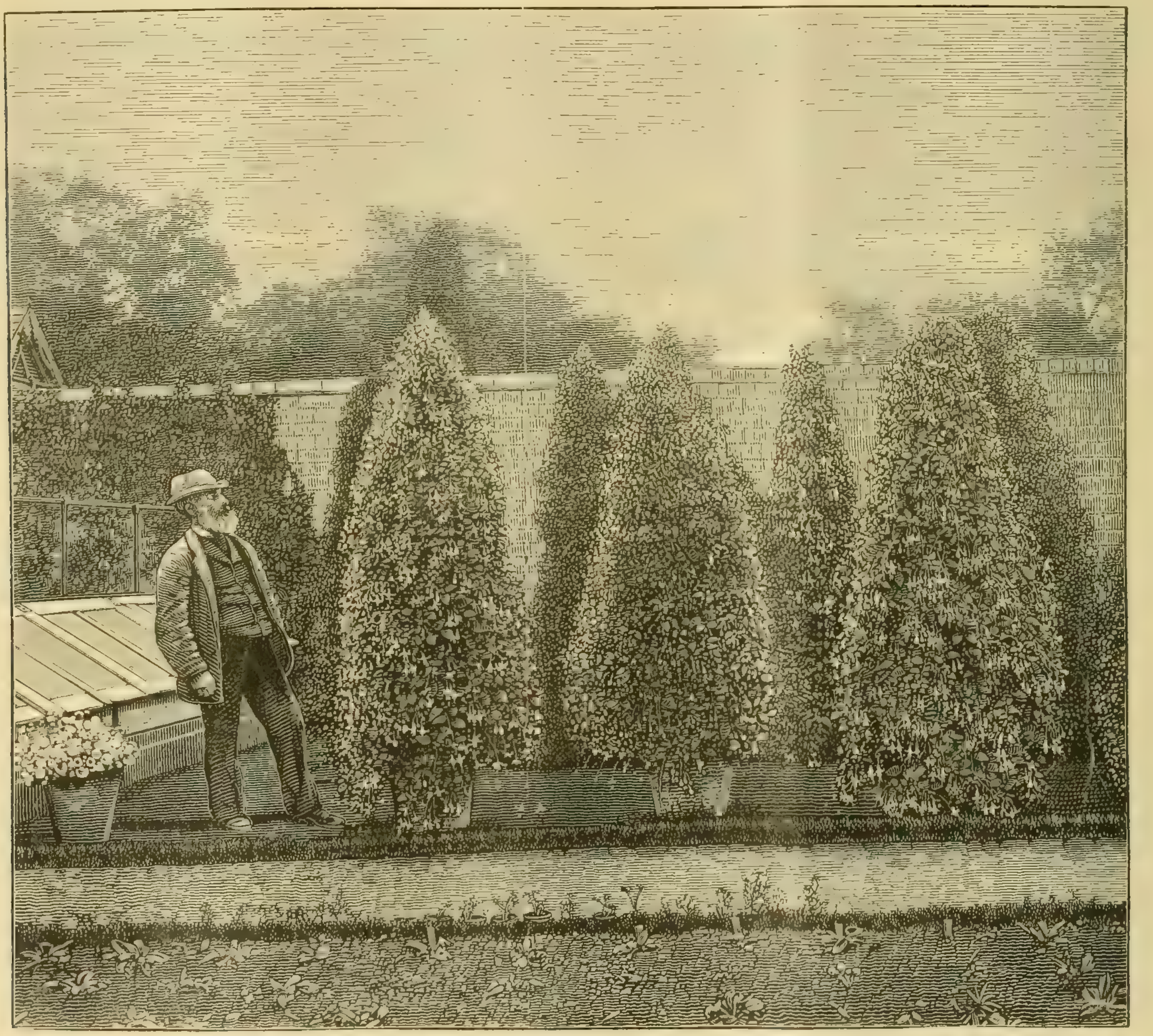
The following motion was proposed by Mr. T. Bevan, and seconded by Mr. Hawes—"That this meeting, at its rising, stand adjourned until April 30 next at 7 p.m., and that the committee be empowered in the meantime to retain the services of Mr. Gerald Dean as general secretary *pro tem.*, until a permanent secretary is elected at the adjourned meeting." This was carried unanimously.

Election of Officers.

The president, Mr. C. E. Shea; treasurer, Mr. A. Taylor; chairman, Mr. Thos. Bevan; vice-chairman, Mr. J. H. Witty; and hon. foreign corresponding secretary, Mr. C. Harman Payne, were re-elected. Including retiring members of the executive committee and resignations, there were fourteen members to be elected that night. Election was by ballot, and the following gentlemen were elected:—G. Castleton, E. F. Hawes, D. Ingamells, E. Jones, R. E. Reeve, C. Want, J. Windibank, G. Gover, F. G. Oliver, W. Harrison, W. Wells, H. J. Jones, J. B. Riding, and Percy Cragg.

SPECIAL PRIZES.

During the time occupied in counting the votes, a little discussion took place, which turned largely on the question of decorative exhibits at the shows, and, eventually, the president offered a Silver Cup, value three guineas, for a table decorated with small flowers of Chrysanthemums. Any number of vases or other receptacles might be employed at the discretion of the individual exhibitor, but no large flowers should be used. The prize should be awarded for general effect only. A second prize of two guineas was offered by the firm of Messrs. Cragg, Harrison, and Cragg, and a third prize of thirty shillings by Mr. Williams, Ealing.



THE LATE JAMES LYE, AND ONE OF HIS PRIZE GROUPS OF FUCHSIA.

Obituary.

JAMES LYE.—On Saturday last, at a ripe age, a victim to paralysis, there passed away at Market Lavington, Wilts., a gardener in the person of James Lye, who had the warm esteem and regard of a wide circle of friends, and who had made for himself a good name in horticulture. For very many years he was gardener at Clyffe Hall, Market Lavington, and there gave his attention largely to the raising and growing of Fuchsias and Potatos. Whilst the varieties of the latter which he raised have been elbowed out of commerce by newer ones, many of his Fuchsias to-day still rank amongst the very best in cultivation—indeed, none are more beautiful, have better habits, or flower more abundantly. Mr. Lye was a very capable raiser and first-class grower of specimens, and the noble pyramids he grew at Clyffe Hall, 9 to 10 feet in height, and referred to in an article in the *Gardeners' Chronicle*, February 14, 1885, were never excelled out of the West of England. He had retired from active life for several years, but still retained his love for Fuchsia-raising to the last. *A. D.*

THE WEATHER.

THE WEATHER IN WEST HERTS.

A change to cold weather. After ten days of unseasonably high temperatures the weather became cold on the 3rd, and since then low readings have prevailed. On the warmest day of the past week the temperature in the thermometer screen rose to 49°, whereas on the coldest day it did not rise higher than 38°. On the coldest night the exposed thermometer registered 16° of frost. Although this is by no means an exceptionally low reading for February it has only once before been equalled during the present winter. The ground is now at about a seasonable temperature at two feet deep, but nearly 2° colder than the average at one foot deep. Rain or snow fell on four days, but the total fall amounted to only about a tenth of an inch. On the morning of the 5th the ground was nearly covered with snow, but as the day advanced this slight layer quickly melted. This was the heaviest fall of snow as yet this winter. For four days there has been no measurable percolation through either of the soil gauges. The sun shone on an average for 3¼ hours a day, or for over an hour a day longer than is usual at this season. The wind has been variable both in strength and direction. On the windiest day the highest record for any hour was 18 miles—direction W.N.W.—whereas on the calmest day the average rate of movement was only about a mile an hour. The mean amount of moisture in the air at three o'clock in the afternoon was as much as 9 per cent. less than a seasonable quantity for that hour. Narcissus minimus first came into flower in my garden on the 1st, which is 15 days earlier than its average date in the previous eight years, and earlier than in any of those years.

JANUARY.

A remarkably warm, wet and sunny January. In the last 20 years there have been only three warmer Januarys. On the warmest day the temperature in the thermometer screen rose to 53°, and on the coldest night the exposed thermometer registered 16° of frost—both unusually high extreme readings for the month. Rain fell on as many as 20 days, and to the total depth of 4 inches, which is 1½ inches in excess of the average for the previous 50 years. This was the wettest January since 1877, or for 29 years. No snow at all fell. A quantity of water equal to the whole of the rainfall of the month came through both percolation gauges. The sun shone on an average for two hours a day, or for half an hour a day longer than is usual. In fact, there have been only three other Januarys as sunny during the past 20 years. In no previous January during that period have there been as few sunless days—only four. The winds were, as a rule, unusually high, and on the windiest day a mean velocity of 26 miles was recorded for the windiest hour—direction W.S.W. The air was exceptionally dry for the time of year.

Our underground water supply. Since the winter half of the drainage year began in October the total rainfall has fallen short of the average for those four months by three-quarters of an inch, equivalent to a loss on each acre in this district of 16,740 gallons. At the same time last year the deficiency amounted to 107,200 gallons per acre. *E. M., Berkhampsted, February 7, 1906.*

MARKETS.

COVENT GARDEN, February 7.

Cut Flowers, &c.: Average Wholesale Prices.

	s. d. s.d.
Anemones (pink) doz. bunches...	2 0- 4 0
— fulgens... ...	2 6- 3 0
Azalea indica., per doz. bunches ...	4 0- 5 0
Azalea mollis, bun.	1 0- 1 6
Bouvardia, per doz. bunches	6 0- 7 0
Calla æthiopica, per dozen blooms ...	2 0- 4 0
Camellias, doz. ...	1 6- 2 0
Carnations, per dozen blooms, best American various ...	3 0- 5 0
— smaller do. ...	1 6- 3 0
Cattleyas, per doz. blooms	9 0-12 0
Chrysanthemums, per doz. best blooms... ...	2 0- 4 0
— small blooms, per doz. bchs.	6 0-10 0
Cypripediums, per doz.	2 0- 2 6
Dendrobium Wardianum and nobile, per doz. blooms ...	2 0- 3 0
Eucharis grandiflora, per doz. blooms... ...	2 6- 3 0
Euphorbia jacquiniæflora, per doz. sprays	4 0- 6 0
Freesias, per doz. bunches ...	2 0- 3 0
Gardenias, per doz. blooms	2 0- 3 0
Helleborus, doz. ...	1 0- 1 6
Hyacinth (Roman), doz. bunches...	3 0- 6 0
Lilac	2 6- 4 0
Lilium auratum ...	2 6- 3 0
— lancifolium, rubrum and album	2 0- 3 0
— longiflorum ...	3 0- 5 0
Lily of the Valley, p. doz. bunches	6 0- 9 0
— extra quality ...	12 0-15 0
Mignonette, dozen bunches	3 0- 4 0
Marguerites, white, p. doz. bunches	2 0- 3 0

	s.d. s.d.
Marguerites, yellow, doz. bun.	2 0- 3 0
"Mimosa," dz. bun.	9 0-12 0
Narcissus, "Paper White," doz. bunches ...	1 6- 2 6
— Soleil d'Or ..	1 6- 2 0
— Golden Spur, per doz. bnchs.	5 0- 6 0
- Ornatus ...	4 0- 5 0
— Princeps ...	4 0- 6 0
— Sir Watkin, per doz. bunches...	8 0 12 0
— Telemonius, plenus, per doz. bunches..	6 0- 9 0
Odontoglossum crispum, per doz. blooms	2 6- 3 0
— grande, per dozen blooms	4 0- 5 0
Pancratiums, doz.	3 0- 5 0
Pelargoniums, show, doz. bun.	4 0- 6 0
— Zonal, double scarlet... ...	8 0-12 0
Primula, double white, per doz. bunches ...	5 0- 6 0
Ranunculus, doz. bunches ...	10 0-18 0
Roses, 12 blooms, Niphetos ...	2 0- 4 0
— Bridesmaid ...	3 0- 6 0
-- Kaiserin A. Victoria ...	4 0- 6 0
— C. Mermet ...	3 0- 8 0
— General Jacqueminot	4 0- 6 0
— Liberty ..	5 0- 9 0
— Mad. Chatenay	4 0- 8 0
Stephanotis, per dozen trusses ...	4 0- 6 0
Stocks (double white) per doz. bunches ...	2 0- 3 0
Tuberoses per dozen blooms	0 4- 0 9
— on stems, p, bun	1 0- 2 0
Tulips, p. doz bnch	5 0- 8 0
— special quality	15 0-18 0
Violets, 12 bunches	1 0- 2 0
— special qual....	2 0- 3 0
— Parma, French, large bunches	2 0- 4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0
— — medium, bunch ...	1 6- 2 6
— —short sprays per bunch...	1 0- 1 6
— Sprengeri ...	0 6- 1 0
— tenuissimus ...	0 6- 0 9
Adiantum cuneatum, doz. bun....	6 0- 9 0
Berberis, per bunch	2 6- 3 0
Croton leaves, per bunch	0 9- 1 3
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches...	2 0- 3 0

	s.d. s.d.
Fern, French, doz. bunches ..	3 0- 4 0
Galax leaves, per doz. bunches ...	1 6- 2 0
Hardy foliage (various), per dozen bunches...	3 0- 6 0
Ivy-leaves, bronze	1 6- 2 0
— long trails per bundle... ...	1 0- 2 0
— short green, doz. bunches...	2 0- 3 0
Moss, per gross ...	5 0- 6 0
Myrtle, per dozen bunches... ...	3 0- 6 0
Smilax, per dozen trails	1 6- 4 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Ampelopsis Veitchii, per dozen...	6 0- 8 0
Aralia Sieboldi, per dozen ...	5 0- 8 0
- larger	12 0-15 0
Araucaria excelsa, per dozen ...	12 0-30 0
Aspidistras, green, per dozen ...	18 0-30 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	9 0-10 0
— tenuissimus per dozen ...	9 0-12 0
Azaleas, each.... ...	2 0- 3 6
Begonia Gloire de Lorraine, dozen	6 0-18 0
— Turnford Hall,	6 0-18 0
Callas, per dozen...	6 0- 9 0
Chrysanthemums, per dozen ...	8 0-12 0
Cinerarias, per doz.	8 0-10 0
Clematis, per doz.	8 0- 9 0
Crotons, per dozen	12 0-30 0
Cocos Weddelliana, per dozen ...	12 0-30 0
Cyclamen, per doz.	8 0-15 0
- extra quality...	18 0-21 0
Cyperus alternifolius, dozen ...	4 0- 5 0
— laxus, per doz	4 0- 5 0
Dracænas, per doz.	9 0-24 0
Erica gracilis, doz.	12 0-18 0
— gracilis alba ...	18 0-24 0
— caffra	9 0 12 0
— hyemalis ...	12 0-24 0
— melanthera ...	12 0-18 0
Euonymus, per doz.	4 0- 9 0

	s.d. s.d.
Ferns, in thumbs, per 100	7 0-10 0
— in 48's, per doz.	4 0-10 0
— in 32's, per doz.	10 0-18 0
Ficus elastica, per dozen	9 0-18 0
- repens, per doz.	5 0- 8 0
Genistas, per doz.	12 0-15 0
Hyacinths (3 in pot), per doz. ...	8 0-10 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen ...	12 0-21 0
Latania borbonica, per dozen ...	9 0-18 0
Lilium Harrisii, per dozen ...	24 0 36 0
— lancifolium, per dozen ...	18 0-24 0
Lily of the Valley, per dozen ...	18 0-30 0
Marguerites, white, per dozen ..	6 0- 9 0
Narcissus, per dozen	5 0- 6 0
Pelargoniums, per dozen, scarlet... ...	3 0- 4 0
Privet, golden, per dozen	5 0-12 0
Rhododendrons, per doz.	18 0-30 0
Selaginella, dozen	4 0- 6 0
Solanums, dozen...	6 0-12 0
Spiræa japonica, per dozen ...	6 0- 9 0
Tulips in boxes, per doz. bulbs ...	5 0 9 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples:— English, per bush:	
— Californian Newtown Pippin, per barrel	30 0-38 0
per case .	8 6-10 0
Nova Scotians, per barrel:	
— Starks	22 0 —
— Spys	25 0 —
— Fallawaters ...	25 0 26 0
— Wagners ..	18 0 19 0
— Russets ...	23 0-26 0
— Baldwins ...	20 0 22 0
— Ribston Pippin	19 0 —
— Blenheim Pip'n	18 6-21 0
— Greening ...	22 0 —
— King of Tompkin's County ...	25 0 —
Canadian, per barrel:	
New York Imperials	25 0-28 0
-- Russet	26 0-27 0
— Greening ..	26 0-27 0
— Baldwins ...	25 0 —
Bananas, bunch ...	
— No. 1 quality...	7 0 —
— No. 2 quality...	5 6- 6 0
— Extra quality...	10 0 —
— Giants, per bunch	12 0-14 0
— Jamaica ...	4 0- 6 0
— Loose, per doz.	0 8- 1 0
Cranberries, case...	13 0 —
Custard Apples ...	4 0- 8 0
Dates, Tunis, per box .. .	0 4 —
— Egyptian, cwt.	20 0 —
Grape Fruit, p. box	10 6 —
Grapes, Alicante, per lb.	1 0- 2 0
— Gros Colmar, per lb.	1 2- 2 6
— Almeria, per barrel	16 0-22 0

	s.d. s.d.
Lychees, per box...	1 4
Lemons:	
— Messina, case	9 0 16 0
Mangos, doz. ..	2 0- 4 0
Nectarines (Cape), per box ...	6 0- 8 0
Nuts, Cobnuts, per doz. lb... ...	8 0 —
— Brazils, p. cwt.	41 0 —
- Spanish, p. bag	35 0 —
— Barcelona, per bag	24 6 —
- Almonds, p.cwt	34 0 —
— Monkey Nuts, per bag ...	18 6-19 0
— Walnuts, dried, cwt.	32 0-35 0
—Chestnuts, Italian per bag ...	13 6 —
— Cocoanuts, 100	10 6-13 6
Oranges, Valentia, per case ...	9 0-26 0
— Seville, p. box (200)	6 6- 7 0
— Navel	17 6-18 0
— Jaffa	12 6 —
— Jamaica ...	9 6-11 0
— Blood	9 0- 9 6
— Mandarines, per box (25) ...	0 10- 1 0
— 50	1 4- 1 7
— Palermo, per 100	3 6- 4 0
— Mandarines (96)	4 0 —
Peaches (Cape) ...	5 0- 8 0
Pears (Cape), per case (40) ...	10 0-12 0
— per case (24) ...	5 0- 7 0
— Californian, box	10 6-15 0
— stewing varieties, per ½ bush.	2 9- 3 0
— Stewing, crate	8 6- 9 0
Pineapples, each...	3 3- 4 0
Plums (Cape), per box	4 0- 6 0
Strawberries, lb....	16 0-24 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, Green French, p. doz.	2 3- 2 6
— Ground, ½ bush.	1 3- 1 6
Asparagus, per bundle:—	
— Paris Green ...	5 0- 5 3
— Sprue	3 9 —
Beans, French, p. lb	1 3 —
-- Broad, per pkt.	0 6 —
Flagcolet, box	0 9 0 10
— Home grown, per lb	2 6- 3 0
— Channel Island	2 6- 3 0
— Madeira, bask.	2 0 5 0
Beetroot, bushel ...	1 0- 1 3
Broccoli, per doz.	1 6- 2 0
Cabbages, per tally	2 0- 3 0
— red, per bushel	2 0- 2 6
Chow Chow, p. doz.	1 6- 2 0
Carrots, French pad	2 6- 2 9
— cwt., unwashed ...	1 6 —
— bag, washed ...	2 0- 2 6
Chicory, per lb. ...	0 3 —
Cauliflowers, doz.	1 6- 2 0
— Italian Heads, per basket ..	2 3- 2 6
Celery, p. doz. bdls.	6 0-12 0
Celeriac, per doz.	2 0- 2 3
Cucumbers, dozen	5 0- 8 0
Endive, per dozen	1 8- 2 3
Horseradish, foreign, per dozen bundles	10 0-12 0
Kale, Scotch, bush.	0 9 1 0
Leeks, 12 bundles	1 6- 2 0
Lettuces, French, per doz. .	1 2- 1 4
Mint, per dozen ...	6 0 —
Mushrooms (house) per lb.	0 8-0 10

	s.d. s.d.
Mushrooms, Buttons, per lb. ...	0 10- 1 0
Mustard and Cress, per dozen pun.	1 0- 1 6
Onions, Valencia, per case ...	6 9- 7 0
— Dutch, bag ...	3 9 4 0
— pickling, per bushel... ...	2 6- 3 0
— French, ½ bag..	2 6- 3 0
— Spring, dozen bunches ...	3 0- 4 0
Parsley, 12 bunches	1 6 2 0
Parsnips, per bag...	2 6 —
Peas (French flats)	5 0- 8 0
— per packet ...	0 6- 0 9
Potatos (new):—	
Canary, cwt....	12 0 14 0
— French (new), per lb	0 2½-0 3
— Channel Island Kidneys ...	0 4- 0 5
Radishes, French breakfast, p.dz.	1 3- 1 6
Rhubarb, per doz.	0 10- 1 1
Salsafy, p. dz. bdls.	4 0 —
Savoys, per tally ...	5 0- 6 0
Spinach, per bushel	2 0 2 6
Sprouts, ½ bushel ...	1 0- 1 3
Sea Kale, p. punnet	0 10 —
Spinach (French), pad	4 3- 4 9
Tomatos:—	
— foreign, bundle of 4 boxes ...	10 0-12 0
Turnips, per doz. bun.	1 6- 2 0
— bags	1 9- 2 0
Turnip Tops, bush.	1 0 —
Watercress, per doz. bunches ..	0 6 —

REMARKS.—The first Strawberries of the season were seen on the 2nd inst.; we may now expect a regular consignment of these fruits. Over 2,000 cases of Cape Plums arrived on the 5th inst., but the cold weather prevents their sale. Cape Peaches are now arriving in better condition than when first received. A large quantity of fruit from the Cape is due to arrive on Monday next. Grapes from this colony were received last week. These met with a poor demand owing to their unripened condition. Prices for Mushrooms are inclined to be firmer. Trade in foreign Tomatos has improved. Business in vegetables is very dull. Pines are a short supply, consequently prices have advanced. The fruit trade generally is somewhat better than is usual at this season of the year. *E. H. Rides, Covent Garden, Wednesday, February 7, 1906.*

COVENT GARDEN FLOWER MARKET.

WITH colder weather flowering plants are not quite so plentiful, but supplies are still more than equal to all demands. Hyacinths are very good, but, although prices are low, it is impossible for the salesmen to clear their stands. Tulips also are over abundant, and returns are much lower than at the corresponding period of last year. Azaleas are not quite so plentiful. Some fine plants of A. mollis are seen. Lily of the Valley in pots is very good. Cinerarias are soon spoiled by the cold winds. Cyclamen are numerous and have sold rather more freely. Good plants of Begonia Gloire de Lorraine are now becoming scarce. Narcissus plants do not sell readily owing to a superabundance of cut flowers. Nice examples of Lilium lancifolium rubrum are noticed; there are also some fairly good L. longiflorums, but the latter are rather tall. Good plants of Spiræas are not abundant, but there are plenty of second quality. Marguerites can be had in quantity. Supplies of Solanums have fallen off somewhat. Dielytra spectabilis never sells readily in this market. Erica gracilis and E. melanthera can still be had in abundance. Coleus in all sizes, from those in 60-size pots up to large specimens, are plentiful. The supply of Ferns varies but little; it is, perhaps, not quite so large as that of the past week or two. The cold weather has stopped the sale of hardy flower roots.

CUT FLOWERS.

Narcissi of various sorts are extremely plentiful. The most prominent varieties are Emperor, Sir Watkin, Princeps, Golden Spur, Obvalaris, Ornatus, and the double Von Zion, or Telemonius plenus. There are also seen large quantities of the Polyanthus type, mostly imported flowers. Tulips are also abundant. A few of the finest double varieties make good prices, but "singles" are very cheap. Liliums are now making rather better prices, especially L. longiflorum. There is still a glut of Lily of the Valley. Roses do not sell well. General Jacqueminot is now marketed by several growers. Liberty is bright in colour, but the blooms are rather small. I find some florists prefer General Jacqueminot on account of its fragrance. Best quality Carnations sell readily, but flowers of second quality are over plentiful. Among Orchids are noticed free supplies of Dendrobiums, Cypripediums and Odontoglossums. Good Cattleyas are not so abundant. Of Eucharis there is no lack, and Callas are cheaper. The old double white Primula does not sell as freely as it formerly did.

In the French Flower Market this morning large supplies were at hand. While much remains unsold from day to day, it requires great care when buying imported flowers, especially in the early morning, for I find on inspection by daylight much of the cut bloom is past its best. *A. H., Covent Garden, Wednesday, February 7, 1906.*

SCHEDULES RECEIVED.

TORQUAY DISTRICT GARDENERS' Association's Spring Show to be held at the Bath Saloons, Torquay, on Thursday, March 29, 1906, and Chrysanthemum Show to be held on Thursday, November 8, 1906.

KENT AND SUSSEX DAFFODIL AND SPRING FLOWER SOCIETY'S First Annual Show to be held at the Great Hall, Tunbridge Wells, on Friday, April 20, 1906. Secretary, Mr. F. H. Chapman, 101, High Street, Rye, Sussex.

ENQUIRIES.

CARNATION. — Can any reader inform *R. F.* where he can purchase plants of Carnation "Coronation"?

EXCELSIOR BOILER.—Can any gardener tell me if this boiler is economical in the consumption of fuel, easily managed, quick in action, and generally satisfactory? *W. J. S.*

ANSWERS TO CORRESPONDENTS.

APPLE FRUIT WITH SPOTTING THROUGH THE FLESH: *X. Y. Z.* We can offer no suggestion as to the cause of the spotting beneath the skin. There is no trace of a fungus present.

BOOKS: *Hobbies.* Mendel's Principles of Heredity, translated by W. Bateson. London: J. Clay & Sons, Cambridge University Press, Ave Maria Lane.

CAMELLIA LEAVES: *T. A. G.* The black sticky substance present on your leaves is often found on these plants. It arises from a sugary secretion formed by aphides. Dirt from the atmosphere and the surroundings collect on this substance. It can be loosened by a mixture of soft soap and paraffin in hot water, and may be removed by sponging. Place a goodly-sized handful of soap in a bucket and pour on this a very small quantity of paraffin. Knead the two substances together until all the paraffin has been taken up by the soap. This will readily dissolve in water, and the petroleum does not rise to the surface to the same degree as when the two are used separately.

CHEMICAL MANURES: *E. E. S.* The package labelled No. 1 is nitrate of soda. The other appears to be a compound containing nitrogenous and other manures, but we cannot undertake to analyse it. Nitrate of soda is a very soluble manure, and should be applied to the plants with care when they are growing actively, especially in the spring. For pot plants it is advisable to apply it in a soluble state in the water when affording water to the roots. The other substance will be best applied as a top-dressing, using a pinch or two to each pot.

CHOICE HARDY PLANTS SUITABLE FOR PRODUCING FLOWERS FOR CUTTING: *Pink. H. P Roses:* Mrs. John Laing, Frau Karl Druschki, Margaret

Dickson, Ulrich Brunner, and Louis Van Houtte. *H. T.* *Roses:* Caroline Testout, Lady Battersea, Killarney, Papa Gontier, and Catherine Mermet. *Carnations:* Raby Castle, Cecilia, and Herbert Cutbush. *Delphiniums:* formosum, nudicaule, and Cardinal. *Montbretia:* Pottsii, Etoile de Feu, rosea, and elegans. *Monarda:* purpurea and didyma. Eremurus robustus, Incarvillea grandiflora, Linum flavum, Hydrangea paniculata. *Liliums:* candidum, L. croceum, and L. tigrinum. *Chrysanthemums:* Marian and Mrs. Heal. *Campanulas:* persicifolia and the varieties alba and flore pleno. Heuchera sanguinea and H. gracillima. *Hollyhocks:* Kniphofia (Tritoma) aloides and K. glaucescens. *Perennial Phloxes:* Brilliant, Comtesse Jarnac, Archie Forbes, Boule de Feu, and Mrs. Jenkins. *Pyrethrums* (*Double*): Aphrodite, Captain Nares, and King Oscar. (*Single*): H. M. Stanley, and Captain Strachan. *Pæonies* (*Double*): Baroness Rothschild, Edward André, and Caroline. *Single Pæonies:* Beatrice, Duchess of Portland, candida, and Milton. *Potentillas:* La Nuit and Victor Lemoine. English and Spanish Iris, also I. Kæmpferi and I. Lorteti. *Michaelmas Daisies:* Amellus Darkness, A. bessarabicus, Hon. Vicary Gibbs, and Fairy Queen. *Sweet Peas:* Dorothy Eckford, Miss Willmott, Lady Grisel Hamilton, Lord Rosebery, Gladys Unwin, and Captain of the Blues. *Climbing Roses:* Dorothy Perkins and Crimson Rambler.

Employment in Canada: *W. C. A.* There should be plenty of openings in Canada. Apply to the Government Emigration Office, 31, Broadway, London, S.W., also to the Canadian Government's Information Office, Parliament Street, Westminster. See also the note on p. 84 referring to English gardeners in America.

Fruit Trees: *F. M.* The bands round the main stems are known as grease-bands, and are applied for the purpose of preventing the wingless females of the winter moth from reaching the branches. Cart grease made from fat or oils, and without tar, is recommended as the best and safest composition to use for banding fruit trees. Grease banding must be performed early in October, and the bands must be kept soft and serviceable. The white coating you mention was probably lime, with which the trees are largely washed in the Kent fruit plantations. The practice of dusting the trees with slaked lime is also adopted by many fruit growers. Probably the best wash to apply to fruit trees is the caustic-alkali wash, as it destroys all manner of insect pests, and removes moss and lichens from the branches. This wash, which can be applied at the present time, is made by dissolving 1 lb. of commercial crude caustic soda in water and, separately, 1 lb. of crude potash (pearl ash) in water. When both are dissolved mix the two well together, adding ¾ lb. of soft soap or agricultural treacle. These proportions are sufficient for ten gallons of the mixture. Handle the wash carefully owing to its caustic nature.

Fumigating with Hydrocyanic Acid Gas: *H. H. T.* See our correspondent's article on p. 85, also previous notes in the issues for April 23, 1904, p. 241, and December 9, 1905. p. 416.

Hyacinths: *A., Bros.* We have often seen this condition. It is due to irregular growth: the central spike grows very fast, but the outer scales do not grow in proportion, and so they constrict and nip off the flower spike. If you could detect it in time a surgical operation would liberate the spike.

Lockinge: *Correspondent.* The glass houses at Lockinge, we are informed, were built by Mr. James Gray of Chelsea.

Mealy Bug on Vines: *R. M.* Our own experience is that the mixture recommended on p. 48 is perfectly harmless to the vines, provided that it is not smeared over the young buds, and that in other respects ordinary care is used in making the application.

Names of Fruits: *G. B.* 1, Gooseberry Apple; 2, Langton Nonsuch.—*S. A. G.* 1, D'Arcy Spice; 2, Lord Lennox.

Names of Plants: *F. E. G., Haywards Heath.* The flower is not a species of Crinum, but is now known as Clivia miniata; its previous name was Imantophyllum miniatum. It is a greenhouse plant, and should not at any time be subjected to the hot atmosphere of the stove. Do not disturb the roots more than once in two years. The plant often succeeds well for three or even four years without re-potting.—*Rex.* 1, (pinnate leaf) Nandina domestica; 2, (coloured do.) Trachelospermum jasminoides; 3, Teucrium fruticans. Why not number your specimens?—*A. Y. L.* The flowers were dried up owing to having been placed in cotton-wool (the worst material in which to pack flowers). 1, Appears to be Epidendrum verrucosum; 2, Bletia verecunda. The variation in colour and form of the lip is not unusual. 3. Cymbidium sinense.—*A. C. P.* Gesnera (Dolichodeira) tubiflora.—*J. O. C.* 1, Codiæum (Croton) Countess; 2, C. Aigburthiensis; 3, C. nobile; 4, C. Earl of Derby; 5, C. Laingi; 6, C. variegatum.—*Subscriber,* 1, Blechnum braziliense; 2, Nephrolepis tuberosa; 3, Ophiopogon Jaburan; 4, Polygala Dalmaisiana; 5, Gnidia pinifolia; 6, Bæckia frutescens; 7, Azalea amæna; 8, Pernettya sp. (?).—*Subscriber,* Acacia armata.—*W. H. B.* 1, Blechnum polypodioides; 2, Blechnum occidentale; 3, Pteris umbrosa; 4, Nephrolepis pectinata.—*C. A. N.* Pittosporum Tobira.—*E. M.* 1, Rosa rugosa; 2, Potentilla fruticosa.—*F. B.* Salvia leucantha.—*A. W. T.* 1, Chlorophytum elatum variegatum; 2, Anthericum Liliastrum variegatum; 3, Stenotaphrum americanum variegatum.

Peach-buds: *A. H. E.* Growth went on favourably for a time, but then came a check, and the buds shrivelled and died. Without knowing all the circumstances we cannot say why. Much correspondence on this subject took place in our columns during the early months of 1905 (see pp. 106, 125, 139, 156, 170 and 234 for that year), when the consensus of opinion was that excessive dryness at the roots during autumn and winter, and a too sudden change in the temperature of the atmosphere in the house when forcing is commenced, were the principal causes of bud-dropping.

Peach Shoots: *Essex.* The shoots are attacked by a species of Botrytis, a fungus commonly attacking imperfectly-ripened wood or young shoots that have been injured by chill. All diseased shoots should be cut off and burned, otherwise the disease will spread to others. After pruning has been done spray the trees with a rose-red solution of permanganate of potash or diluted Bordeaux mixture.

Pears for growth as Cordons against a wall ten feet in height, facing the South: *G. L. H.* For ripening in September: Triomphe de Vienne, Marguerite Marillat or Fondante d'Automne. For ripening in October and November: Conference, Louise Bonne of Jersey, Durondeau, Doyenné du Comice. For ripening in December, January and February: Josephine de Malines and Le Lectier. There are several other varieties equally good as those named above, but we have always had good results from these sorts. Le Lectier is but little known, but it is a grand Pear of excellent quality, and grows satisfactorily.

Potatos: *T. T. T.* We know of no main crop Potato or any other of recognised merit which produces pollen in the flowers freely and later seed-berries. Nothing seems to be more rare now than to find even a single seed-berry produced naturally. New varieties are obtained by extracting, with much difficulty, the tiny deposits of pollen found in the pollen-cases in the centre of the Potato-flowers, of certain varieties, and conveying it to the pistils of the flowers of other varieties, but rarely indeed is there found pollen sufficient to produce natural fertilisation. That this state of things is very different from what existed some 30 to 40 years ago is certain, for many varieties at that time produced pollen and seed berries in abundance. The change is probably due to the constant in-breeding by intercrossing that has been practised for the purpose of raising varieties that yield heavy crops of tubers, hence the force requisite to produce pollen has been largely exhausted or diverted. Varieties that produced pollen freely never yielded more than moderate crops of tubers.

Roses: *G. L. H.* Turner's Crimson Rambler, Lady Gay, Mrs. F. W. Flight, are all excellent ramblers, and the fourth may be Cheshunt Hybrid, or climbing La France.

Royal Horticultural Society: *Tooting.* The minimum subscription is one guinea each year. Those who elect to subscribe one guinea only are called upon to pay in addition an entrance fee of one guinea, unless they are professional gardeners.

Situation in United States of America: *A. N.* See note on page 84 from a correspondent residing in America.

Stephanophyllum "longiflorum": *E. B.* The genus Stephanophyllum is now included under Pæpalanthus. P. longifolius may be the plant you refer to. There is no such plant as Stephanophysum longiflorum. You probably mean S. longifolium, which is now called Ruellia amœna. This last-named plant is more likely to be found in a nurseryman's catalogue than is P. longifolius, a plant of little garden value and having a sedge-like habit.

Strawberries failing: *Perplexed.* The diseased condition is not due to a fungus nor to the presence of insects in the soil as you suggest, but the failure has probably resulted from some adverse conditions of culture. Too much water at the roots, or the excessive use of chemical manures, would be sufficient to cause rotting in the crown. Did you bring the plants into the forcing-house when they were in a frosted condition? The potting compost appears to be suitable.

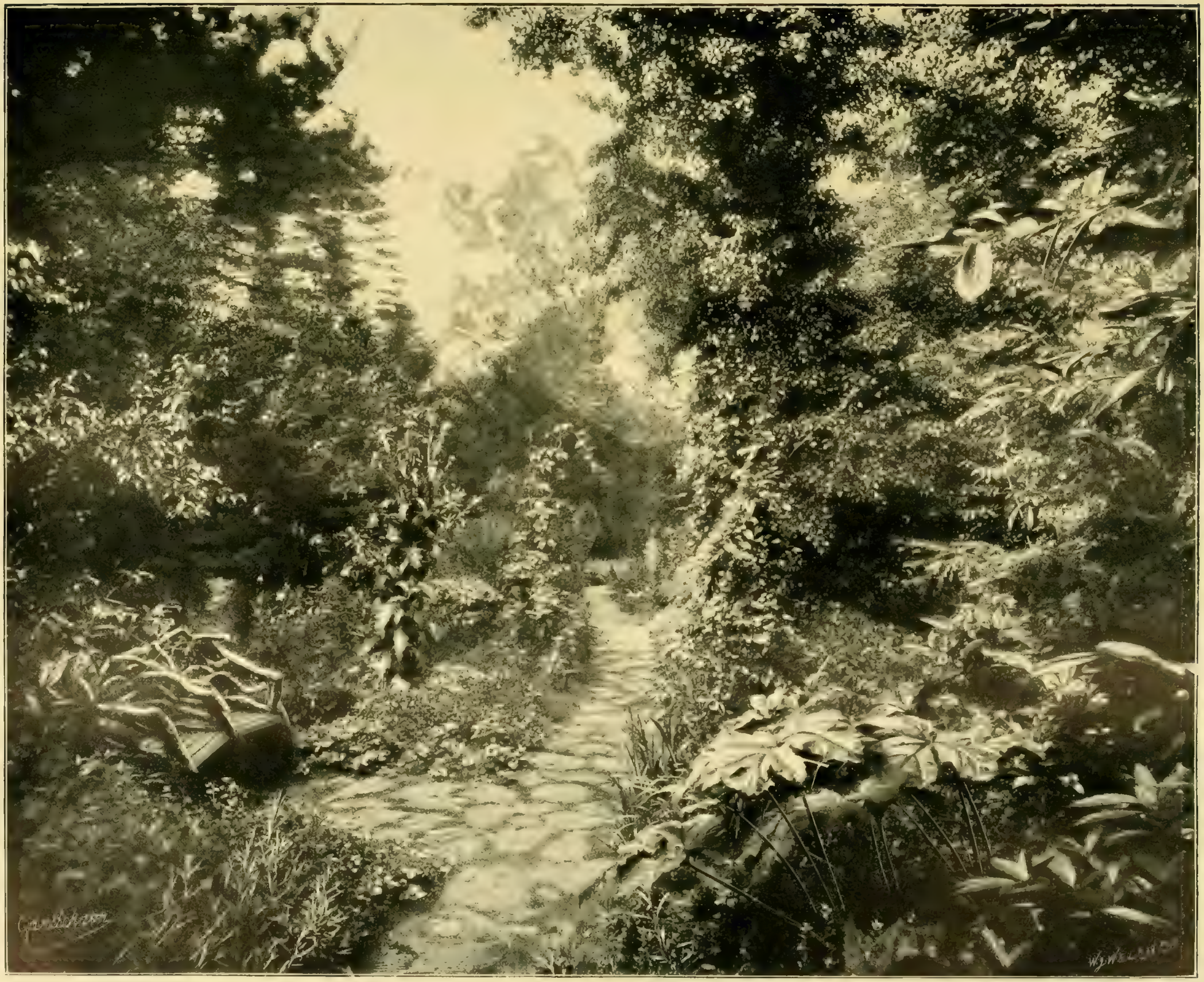
The Heating Arrangements in Dalkeith Gardens: *C. B., Guernsey.* In reference to our remark on p. 33 that the late Mr. Malcolm Dunn had effected a rearrangement of the heating system of Dalkeith, for the purpose of heating all the houses from one centre, we have received additional information, owing to the courtesy of Mr. Jas. Whytock, the Duke of Buccleuch's head gardener at Dalkeith Palace. Mr. Whytock writes as follows: "I had a conversation on this subject with the Duke of Buccleuch quite recently, who said that there were previously 21 fires and boilers to heat the glasshouses that are here at present, excepting the large new vinery, containing 10 rows of 4-inch pipes, and which has been built since. These 21 boilers were thrown out, and we have now instead one stokehole containing three steel Cornish or Trentham boilers, each 12 feet in length. During six of the warmest months in the year one of these boilers easily supplies all the heat needed, and in winter two boilers supply it just as easily. We commence to force all hothouse fruits in December, and therefore require to maintain high temperatures in the coldest weather. One man is able to attend to the fires, and this in itself is a great saving. On looking through the books containing the details of garden measurement I find that under the old system of heating as much as 600 tons of coal were burnt in some years, and an extra man had to be kept to wheel coal to and from the numerous stokeholes. At the present time we burn from 300 to 350 tons per year, according to the severity of the winter. Taking everything into consideration I believe Dunn's improvement has resulted in saving the labour of two men, and besides the economy effected in fuel and labour, the heating is incomparably more satisfactory, than it was previously." Such are the circumstances that led us to make the remarks to which you have drawn our attention.

Vines: *H. W.* A fly, quite different from the Phylloxera.

White Grubs in Flower-pots: *J. L.* The insects are allied to the mealy-bugs, and are known as Ripersia terrestris. They can be destroyed by small quantities of bisulphide of carbon. To apply this liquid, make a few holes in the soil with a 4-inch wire nail, and pour the liquid into the holes, applying two table-spoonfuls to a 6-inch pot. Take care that no light is brought near the liquid.

Willows injured by Beetles: *J. W.* The insect is the common *Phratora vitellinae.* Try scraping with Paris Green (poison), at the rate of 1 ounce to 20 gallons of water. If the foliage will stand a greater proportion of Paris Green you will find it more effective; but you had better make a few experiments on a small scale first in order to ascertain this. The solution must be used with great care, as it is highly poisonous. Apply it as soon as the insects appear on the foliage. The larval stage of this insect is also destructive. They feed in colonies and are very conspicuous.

Communications Received.—The British Gardeners' Association.—M. Lemoine Nancy.—Roger de la Borde Segré.—C. T. D.—S. W. P.—J. G.—Sir T. L.—W. B. H.—E. S. S.—S. W. F.—A. D. G.—W. K.—W. G. S.—C. T. D.—W. W.—R. W. D.—W. J. V.—Sutton & Sons—J. C.—Nat. Potato Soc.—J. B.—H. D.—D. R., Queen's County (not of unusual occurrence)—W. H.—J. G. W.—R. W. R.—G. M.—A. D.—W. H. W.—Grapes—L. G.—G. B.—F. G. B.—R. W. R.—W. F. S.—A. E. M.—G. B.—F. B.



From a Photograph by Mr. Ralph, Dersingham.

A VIEW IN THE QUEEN'S "WILD" GARDEN AT SANDRINGHAM, ILLUSTRATED BY SPECIAL PERMISSION OF H.M. THE KING.

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THE CARNATION IN FRENCH LITERATURE.

TO Mr. Douglas, of Great Bookham, I am indebted for a perusal of two early French books on the Carnation, the one *Le Jardinage des Œillets*, à Paris, MDCXLVII, the other, *Nouveau Traité des Œillets, la façon la plus utile and facile de les bien cultiver, leur noms, leur couleurs, and leur beauté. Avec la Liste des plus nouveaux. Par L.C.B.M.*, à Paris, MDCLXXVI. Both are interesting, the latter especially so, because every page bears evidence of its having been written by someone intimately acquainted with the Carnation. We have nothing like either in England, the best early treatise on the Carnation being that of John Parkinson embodied in his *Paradisus*, but nothing like so full.

Le Jardinage des Œillets was written by *L. B.*, whose address to the reader is a verselet telling how the Carnation came to wear the sceptre in the Kingdom of Flowers. L. B. was perhaps less an authority on the Carnation than an elegant writer who was as happy in filling pages of his book with philosophical remarks as in discoursing on cultural matters. Some 70 names of Carnations are given, and it is interesting that among these are some also named by Parkinson, whose "Gray Hulo" appears as "le Hulot gris." "Le sauvage" may be accepted as identical also with the "Sauadge" of our John. Instead of the public flower-shows there seem to have been private exhibitions, for the writer remarks on the pleasure there was in rearing some beautiful and rare sort; over and above the profit it brought to its master, and to see it inspected by gardeners who came to examine all its parts, to observe its petals, to distinguish its colours, and, according to the spirit by which they were animated, to show up its good qualities or discover its faults.

Carnations were cultivated solely in pots, and when in flower the blooms were supported by round pieces of cardboard, white or black according to the colour of the flower. Bloom was produced nearly the whole year round; during winter, from early layers which had spindled in autumn and from old plants which pushed new growth late in the year, these flowers being used in the composition of winter bouquets. The little structures in which the plants were kept during winter were freely ventilated, and no artificial heat was applied unless in very cold weather, when a fire of charcoal was lighted.

In a chapter on seedling-raising it is advised to leave one or two pods only on each plant; and seedlings, like the others, were cultivated in pots. Propagation was effected by various methods, in addition to that of sowing seeds; a method of splitting up the end of the stem of cuttings into four strips being recommended as infallible. Layering by splitting the stem seems to have been a usual practice, but the common method of making layers is also described. The book concludes with "Christian Reflections on Flower Growing."

The writer of the *Nouveau Traité* goes about his business in a more workman-like manner, in the preface remarking that several people raised objections to him for divulging his secrets and making his experience public, narrow views which he combats with vigour. Chapter I. treats of layering, the best time for doing this work being from July 20 to the month of August, the method of layering being detailed clearly and with fulness. The soil used for layers was composed of two parts thoroughly decayed horse dung, and one part black or marsh earth. Small pots or funnels of tin are recommended to be used for the layers. Those failing to emit roots were put on a hot bed and covered with bell glasses, by which means splendid plants were produced. Otherwise cuttings were not relied upon. Chapter II. is about pots, which it would appear reached the gardener in an unfinished condition, as the remarks on making holes for drainage show. Soils are the theme of Chapter III., those too heavy, too light, too moist and too dry being condemned. For "Incarnats" a soil of one-half horse dung thoroughly decayed and old, the other half to be composed of black soil, material from elevated tufts on marshes, and one-sixth yellow loam is noted. For other sections and Picotees two-thirds black soil and one-third horse dung with one-sixth yellow loam. Chapter IV. tells how the Carnation is to be potted. The peg having been removed from the layer the latter has the connecting piece of stem severed quite close to its junction with the layer, so that roots may push from it as well as from the tongue. The bottom of the pot was next fitted with horse dung for drainage. The compost was then added till it reached nearly the rim of the pot, and decayed dung level to the brim, and one layer set in the material. Most growers, it is remarked, planted three or four in each pot, but the author preferred to put one only, and this was planted directly into the flowering pot. Up till the beginning of December the plants were kept in the open air, but protected from inclement weather. Then they were transferred to the greenhouse, from which frost was kept by means of paper and mats in preference to fires. In many gardens the usual method of protection consisted in placing the plants in cellars. During winter water was only applied when the plants flagged, and sometimes saucers were used as a means of conveying water to the roots, each plant being placed in a saucer into which just a little water was introduced when the soil required moistening. In Passion week the plants were returned to the open, and numerous recommendations are given as to the aspects to be chosen during the different stages of the plant life.

Chapter IX. is devoted to water and its application, the writer disapproving of the practice of supplying manure water lavishly, his own experience being that cow-manure was best, and three or four applications sufficient during summer. Chapter XV. is all about seed-saving, sowing, &c. Plants which naturally were free seed bearers were chosen as mothers. Some sowed the seeds in autumn, others in spring, a time which he himself preferred, and favoured the Holy Week," because of the full moon." Rea, or was it Gilbert, used almost exactly the same words when writing of the same subject.

In Chapter XXIII. the qualities of a good Carnation are thus given: The flowers ought to be of large size, furnished with numerous petals, round, well-striped and without spots. They were to be large, because small blooms were not esteemed unless very fine indeed; well furnished with petals, because a flat flower had not the beauty of the dome-shaped, that is to say, one in which a kind of dome forms in the centre of the flower. (This type of flower is portrayed in *Parkinson's Paradisus.*) A circular outline is the form required in a perfectly striped Carnation, for the Carnation without stripe (or bar) is little to be esteemed, the stripe forming its chief beauty when it is large, and when it extends from the base to the edge of the petal. Lastly, the flower was to be spotless, because a spotted Carnation lacks purity, is confused; and being confused, should be thrown away. A capital catalogue *raisonné* of the best sorts then in cultivation is given. It is divided into sections, e.g., Violets in which purples, brown (or black-brown) were placed); reds of all shades; Incarnats, pale, bright, and flame-coloured; Roses, flesh, pure whites, and "pignetez," the latter being all spotted. With the exception of these the others were all flakes with white grounds. There are also tricolours, in which "a bar of purple followed one of pale rose on a white ground." Another variety had a "milk" ground cut with large brown, nearly black bars and rose colour. A "bizarre" is mentioned composed of seven colours. In addition to the description of the flower of each variety, its habit, the number of blooms to be left on its plants, their healthiness, or liability to disease, and the place it was raised, are all given.

This very keen florist also thought it was proper to dress blooms to the best advantage, by which they were made larger and more shapely, and disposes of the objections that it would appear were even then brought against the practice as being opposed to nature. *R. P. B.*

SOUTH LODGE, LOWER BEEDING.

OUR illustration at Fig. 40 represents a view of South Lodge, the residence of F. D. Godman, Esq., F.R.S. It is situated about four and a half miles from the old town of Horsham, on the Brighton road. The owner is a very enthusiastic plant lover, his especial favourites being Orchids and Carnations. During the past few years, many alterations and additions have been made in the gardens. A batch of Cyclamen, showing good cultivation, is accommodated in one of the houses; while Primulas, among which the Duchess forms a conspicuous feature, are seen in excellent condition. Carnations are extensively cultivated, a succession of these beautiful winter flowering plants being maintained. Most of the better varieties of these flowers are grown, including Enchantress and Yuletide, which are favourites at South Lodge. In still other houses plants of Souvenir de la Malmaison Carnations are looking in perfect health, while a number of plants of Begonia Gloire de Lorraine almost fill another glasshouse. Salvias brighten the conservatory with their brilliant flowers, the plants being exceedingly well grown. Other houses are filled with stove and greenhouse plants, such as are useful for decorative purposes and for furnishing cut flowers. At the time of my visit a good crop of black Alicante Grapes was still hanging in one of the vineries. Muscats, Peaches, Melons, etc., are also cultivated. In the Orchid houses Cypripediums furnish an abundance of flowers, many choice varieties being included in the collection. Example: C. Leeanum giganteum, C. L. magnificum, C. L. virginale, C. L. Keeling's var., C. L. aureum, C. L. Clinkaberryanum, C. insigne Saundersii, C. aureum Hyeanum, C. Acteus, C. Milo, etc. The Cattleya house contains some fine plants of C. Bowringiana, some of which have been in these gardens for upwards of 20 years. Other plants noticed were Brasso-Cattleya Mossiæ-Digbyana, B.-C. gigas-Digbyana, C. Mrs. Pitt, C. Iris, L. C. Fascinator, L. C. luminosa, L. C. Canhamiana, L. C. alba, L. C. Charlesworthii, L. C. Hypatia, L. C. Gottiana, etc., all of which are doing well. In another house a batch of Lycaste Skinneri and its varieties were in flower, the plants exhibiting extraordinary vigour, the white variety being especially noteworthy. A system of staging is adopted in the Odontoglossum house whereby each plant is surrounded with fresh air. Over a bottom staging of shingle is placed another stage made of iron rods running from end to end of the house. On these rods are placed obliquely small strips of teak wood. The flower pots are stood upon two of these strips of wood, and as a result the air circulates freely among the plants. Amongst the choice plants are Odontoglossum Ruckerianum, O. triumphans, O. Harryanum × crispum, O. excellens, O. Halli, O. Edwardsii, O. grande, O. crispum aureum, and O. Andersonianum. The Calanthes have made some fine pseudo-bulbs, and are throwing up very strong flowering spikes. Large and well-grown plants of Cineraria were in frames, several of which also contained Violets La France and Princess of Wales. I also noticed Hippeastrum (Amaryllis) bulbs of a large size.

The pleasure ground contains a good border of herbaceous plants, at the end of which is a well-furnished rock and an Alpine garden. Tubs containing Agapanthus and Hydrangea are arranged around the mansion in the summer time, and when I saw them in flower they were very handsome. The plants, I should think, must be among the finest in the country. Large Rose beds adorn the lawn; also beds of Narcissus in variety, some of which contain several thousand bulbs (see Fig. 41). Lilies and several species of Rhododendrons also find a home in this quarter. I noticed R. Falconeri, R. cinnabarinum, R. Thomsoni, R. Royli, R. campylocarpum, etc. A little shelter is obtained from some large Beech-trees above them, and all appear healthy. The kitchen garden was very prim. In small ornamental lakes are aquatic plants, with Azalea Mollis and other useful flowering plants arranged on the slopes and banks. A cool greenhouse contains specimens of half hardy Rhododendrons, R. argenteum grande, R. Aucklandii × Fortunei being the more conspicuous. Flowers from these plants have been exhibited at the meetings of the Royal Horticultural Society. Some grand views are obtained from the terrace in front of the mansion, and above the tops of a wood can be seen the South Downs and the Devil's Dyke, near Brighton, which is 16 miles distant. Mr. Moody, the head gardener, has been entrusted with the care of these gardens for upwards of 28 years, during which time he has formed one of the most interesting gardens in Sussex. *W. A. Cook.*

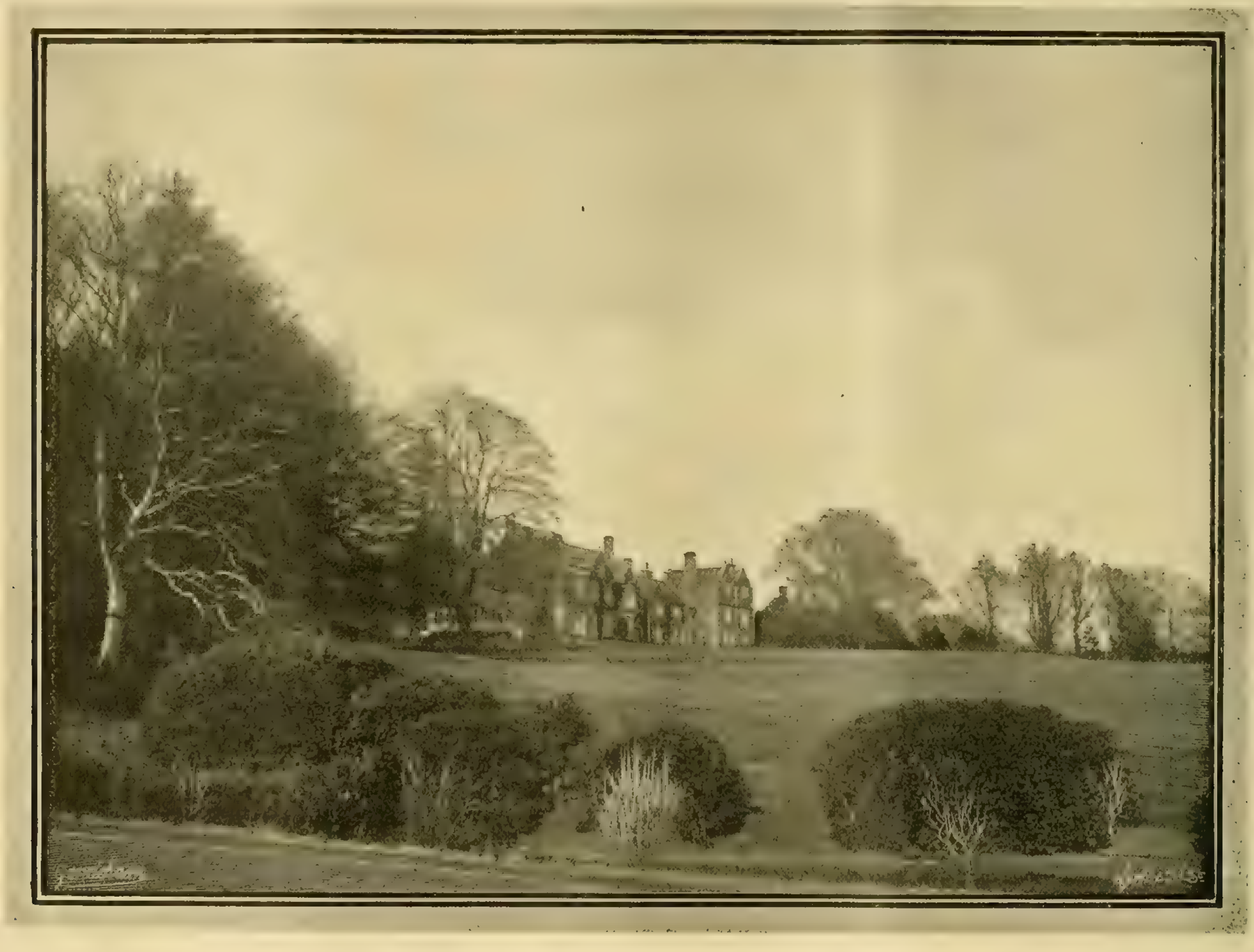

FIG. 40.—SOUTH LODGE, HORSHAM, THE RESIDENCE OF F. D. GODMAN, F.R.S.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM WARDIANUM.

THIS is still one of the handsomest of Dendrobiums, its profusion of large white flowers tipped with purplish-rose and having the disc of the lip dark yellow with two maroon blotches rendering it a charming flower and unlike any other hybrid or species. The main Orchid house in the Right Hon. Lord Rothschild's gardens at Tring Park has the end of the central stage filled with a fine display of splendidly grown plants, whose 3 to 4 feet long pseudobulbs are plentifully set with fine flowers varying in tint but always beautiful. The plants are grown and the buds produced in the warm moist atmosphere, where some ornamental stove plants are also cultivated. As the flowers expand they are removed to the drier conditions of the Cattleya house, where they are at the present time. When the flowers have passed the plants will be returned to the growing house until the new growths are fully made up, when they will be rested in a cool, well-ventilated atmosphere. Under such treatment D. Wardianum does not deteriorate, but if the growing and resting seasons be not observed it is short-lived. A number of plants of Calanthe Regnieri, a fine Laelio-Cattleya ×, between L. purpurata and C. Trianæi Reine des Belges, the pretty Lælia rubescens (acuminate), some hybrid Lælias, Lælia superbiens, and other showy Orchids were in flower in the same house.

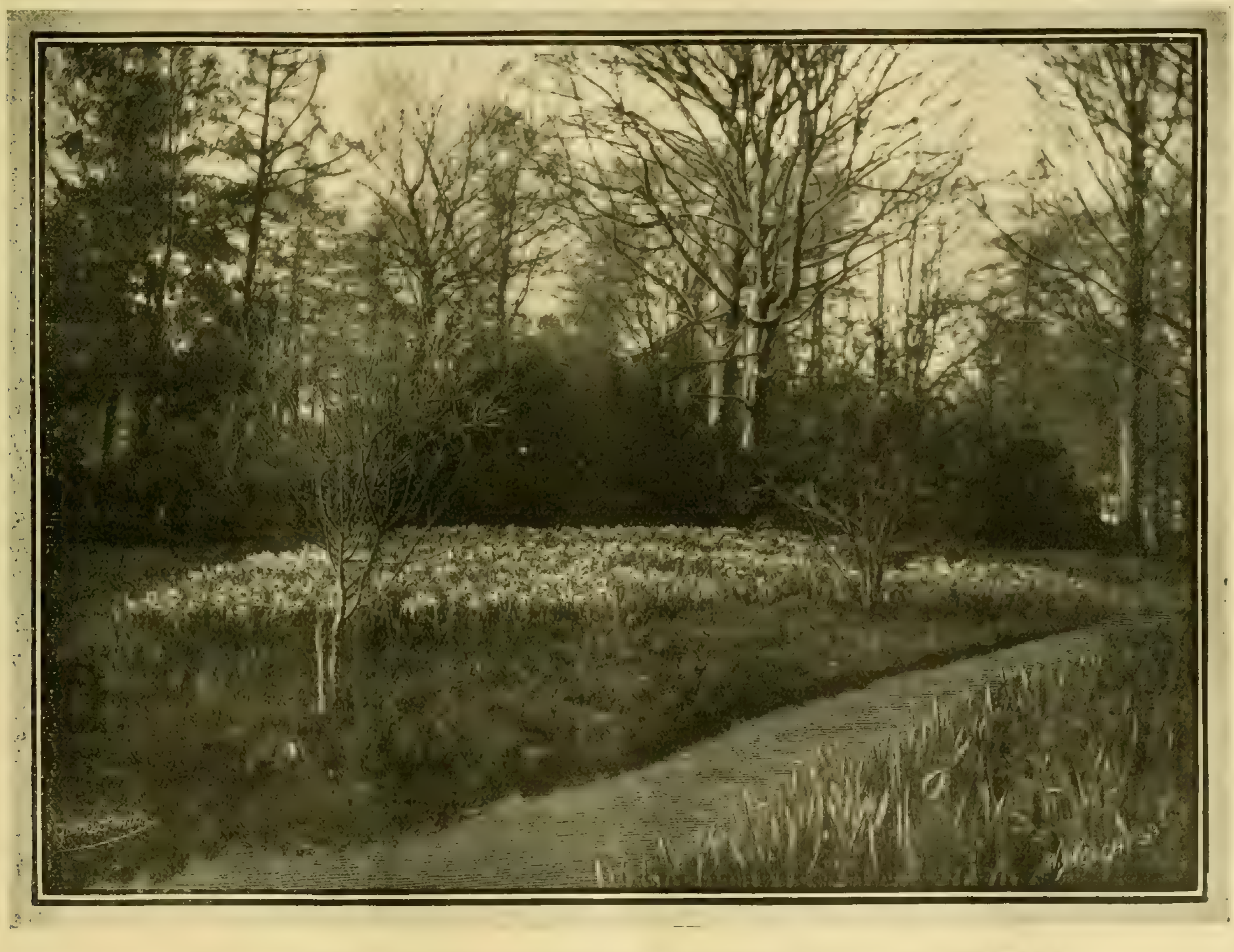

Fig. 41.—"Emperor" Narcissus flowering on the lawn at South Lodge. (See page 98.)

ZYGOPETALUM BRACHYPETALUM.

This pretty and uncommon evergreen species has flowered with Mrs. R. A. Mitchell, Mayford House, Woking (gr. Mr. Gittens). The flower sent is nearly as large as that of Z. Mackaii. The sepals and petals are of purple-brown colour, with a slight greenish base and a few irregular, thin, transverse green lines. The lip, which is longer and narrower than in Z. Mackaii, is nearly covered with a broad irregular veining of a light blue colour, the white ground colour showing through at the margin and between the veining. It is an elegant and distinct species not often met with in gardens, although it was collected by Libon, on the peak of Itabira, Minas Geraes, Brazil, in 1847, and has since been imported occasionally. It is grown in the intermediate house without much difficulty.

THE MAKING OF ORCHARDS.—II.

(Continued from page 37.)

In the last article the preparation of the ground for the contemplated orchard was dealt with, and reference was made to some of the most common faults committed in the matter of planting the trees. The old-fashioned method of "dumping" the tree into a square-cut hole has been referred to, and one or two personal instances of observation in this direction were cited to show the impossibility of obtaining satisfactory results under such rough-and-ready systems of planting. It would be quite profitless to go into further details concerning a practice which has nothing to recommend it even on the score of cheapness, for the hole-digging plan is an expensive one; but it will be interesting to give an example, by way of contrast, to show what the trees, had they been properly planted on prepared soil, might have done. It so happened that a couple of Apple trees were left over after the orchard had been set out, and these two single specimens, of much the same quality as the rest, were put in in the corner of the farm garden in a good piece of prepared soil. These two trees are now some 15 feet in height, and bear fair crops, while the others, planted in holes in the grass, are, as already stated, dead or dying.

In a good deep soil, well drained and of a pliable nature, the hole-digging plan, provided that the holes are dug large enough, so that the roots can be stretched out naturally, is not so absolutely fatal to success as when one has heavy land with a holding subsoil to deal with; but it stands to reason that if you go right through the soil, or nearly through it, planting your trees actually on or just above the subsoil, the chance of a healthy growth is very remote, and no wood means no fruit. For a time trees thus planted may succeed moderately well, for they will feed to some extent on the good soil thrown back into the hole upon the roots, but very soon the evil effects of the sour soil below will become evident, canker and decay will set in, and the trees will gradually, or perhaps quickly, perish.

Surface Planting.

The alternative to this antiquated and entirely wrong method of planting is to be found in the system known as "surface-planting," which, as its name implies, consists of putting in the trees so that they actually stand on the surface of the original soil, as far as possible, that is, from the subsoil below. It must not be supposed, however, that planting flat upon the ground is recommended, for to do so would amount to asking the tree to spread its roots in a directly lateral position. This, it need hardly be explained, is not a natural proceeding, and the difficulty is overcome by the simple process of taking the surface soil, at some distance from the proposed position of the tree, and forming a gently sloping mound, at whose rounded apex the tree is set in position. In order to make the process more simple it is better to set out one's ground throughout in a businesslike manner before planting begins, and a sufficient number of stakes, to which the trees will afterwards be secured, should be at hand for the purpose. When these have been firmly driven in the planting can proceed, and the stakes will not be disturbed in the planting process, since no digging is necessary in their vicinity. The stakes fixed, the mounds already mentioned will be thrown up around them to a depth of six or eight inches at the centre, care being taken that the soil thus used is brought from a spot as far away from the tree's actual position as possible. How far this soil for the mounds will have to be transported depends on the distance between each row of stakes; but in any case it will come from a spot about half-way between each row. It now remains only to place the tree in position, tie it loosely to the stake, and lay out its roots naturally and evenly around in their original positions, remembering at the same time to cut away with a sharp knife all broken or bruised portions of root up to a sound point. Some more soil is then thrown lightly over the roots, so that all are covered to a depth of three or four inches, and the tree is for the present left to settle. Later on it will need a little more attention.

The advantages of this method of planting will be apparent to anyone who cares to consider the question for a moment. Firstly, because the stakes are set in position first of all, and absolutely straight rows of trees are thereby secured. Under this system no damage is possible to the branches, but when stakes are put in after planting the bark must inevitably be injured, fruiting spurs knocked off, and twigs broken. Secondly, one gets the full advantage of the depth of the original soil in addition to the extra depth of soil thrown up around the tree, both under and above its roots. Thirdly, the main roots begin their fresh growth in a sloping, natural, and uncramped position, with a good depth of mellow soil below, and no sour material anywhere within reach for many years to come. Fourthly, the formation of the mound provides a natural system of surface drainage. And fifthly, the smaller roots of the tree are encouraged to keep near the surface, and so form plenty of fibre (which corresponds to the fruit spurs above), instead of wandering downwards in the forlorn hope of finding something to feed upon.

The planter, when following this method of orchard-making, must, of course, modify his procedure to some extent, according to the depth of the soil he is dealing with, but even this plan of surface planting is not to be recommended on a very shallow soil, which is not suitable for fruit trees unless one is prepared to pay pretty heavily for the manuring which will be necessary in the future. It is far better to pay more rent in the first instance for a better and deeper soil than to take a piece of poor and shallow land, which will cost much to get into good order before the trees are planted, and will need much "mending" from time to time afterwards. The directions given above refer to an average soil, say, of a foot in depth, and if deeper, so much the better. On such a soil the trees will have a good 18 inches to start upon, in addition to the 3 or 4 inches above the roots. Ground which is in fair heart and has been well cultivated will need no manuring in the first instance, and, indeed, even if the soil is poor, any manure used should be thoroughly rotten, and none of it should come in contact with the roots. The application of manure before planting is an expensive method, because it is difficult to put it in so that the tree will get the full benefit of it, and it is not so easy to regulate the quantity as when it is applied after planting from the top of the ground. Besides this, top dressings serve a threefold purpose: they feed the trees from above, thus keeping the roots near the surface, where sun, light, and air can work their good effect; they protect the roots of the tree from cold winds and frost in winter; and keep off the fierce and drying rays of the sun in summer. Trees planted in the autumn should be dressed with manure, which for top application need not be very rotten, so soon as they are "settled," that is to say, within about a month or so after planting. It may, however, be advisable, if severe frost is feared, to cover up around the stem before this; but as newly-planted trees require a little attention around their roots within the first few weeks after being put in, it is as well, if possible, to defer manuring until this extra attention has been given, and the tree is left to itself. The work necessary simply amounts to patting the soil gently over the roots with the back of a spade, so as to make all firm, and tying the stem firmly to the stake, not forgetting to bind a wisp of straw around the tree to prevent chafing. A fortnight or so should elapse between the time of planting and these last finishing touches, so that the tree may have time to settle naturally to some extent, and it should be particularly observed that when all is finished the stem of the tree is just so far underground as it was when lifted from the nursery. The mark round the stem will show this. The manure is now shaken lightly around the stem, and spread out over the roots to a distance of about 2 feet all round. This will cover all the roots in the first instance, but subsequent dressings will have to extend as the roots go farther afield. By the time that the winter is over the nourishment in the manure will have been washed down to the roots by the rain, and the remaining litter will be lightly forked in at the end of summer, ready for a fresh dressing to be applied before the frost sets in in the autumn. These light annual dressings are better than heavy applications of manure once in two or three seasons, for they nourish the trees more gradually, besides protecting the roots more effectively, and it will be found more easy, when only a little manure is applied at a time, to keep down the growth of weeds. Trees planted in the winter or early spring may be manured in the same manner, but in this case it will be as well to do so very lightly, and to add further dressings annually in the autumn. The chief advantage of this procedure is that the heavy rains of autumn will send all the goodness of the manure into the soil, whereas if the dressing is applied in the spring it may be there for months before rain comes, much of its virtue being exhausted by cold March winds and summer sun. *East Sussex.*

(To be concluded.)

KNIPHOFIAS AND THEIR CULTURE.

(Continued from page 83.)

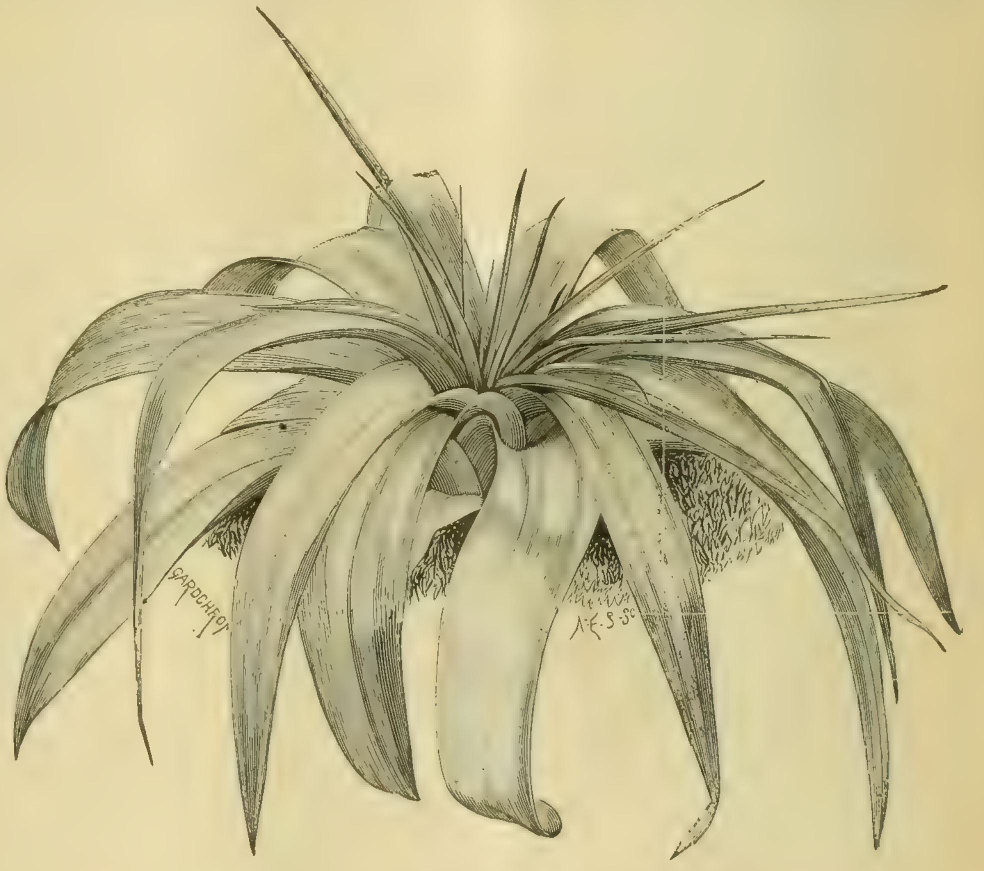

Fig. 42.—Kniphofia Northiæ, much reduced.

K. foliosa.—An Abyssinian plant of great vigour, but one requires to be careful as to the type of plant acquired, for most K. foliosa grown in this country are poorly-coloured forms probably raised from plants grown with other species, for they shew, in addition to marked worthlessness, traces of hybridity with K. caulescens and K. præcox. The best forms of K. foliosa are noble plants, handsome both in flower and foliage, whilst the richness of the flower heads is not surpassed by any other early flowering species. It has giant leaves—broad and sturdy—arranged in handsome Bromelia-like tufts, and produces stout scapes of reddish scarlet flowers, which pass to lemon yellow as they age. The spikes are cylindrical and about 3 feet in height, and last long in good condition. It has been called K. Quartiniana, and the plant now known as Quartiniana in gardens is the best form of K. foliosa known to me. This form is of bold habit and a splendid plant for large rockeries and for borders. The plants are quite hardy, and are easy to cultivate.

K. Leichtlinii.—Another Abyssinian species of doubtful hardihood everywhere, but which can be grown very successfully if the roots are lifted in cold districts for storing during the winter. It is a moderately vigorous and, in this climate, deciduous plant, whose spikes are cylindrical and very long, commencing to flower from near the top or the middle of the inflorescence; the anthers and styles are much exserted. The rootstock has few fleshy roots, and a limited number of semi-prostrate, twisted pale-green leaves. The spikes are produced in late summer, and are 3 feet in height, bearing a brush-like inflorescence coloured dull vermilion externally, yellow internally, each flower-spike developing a yellowish tint as it ages by reason of the multitude of apricot-tinted stamens that survive the perianths. *Aurea*, an orange-yellow variety with scarlet stamens, and *distachya*—a twin-spiked variety, whose flowers are of orange scarlet colour, and whose stamens are scarlet, are splendid plants for the choice flower border in warm districts. Distachya is the taller and, I think, the most effective plant of the three.

K. Northiæ (see Fig. 42).—A stately plant of noble proportions, forming a stout stem 3-4 feet in height, the broad, glaucous leaves forming a huge Agave-like rosette which measures a yard across. The flower scapes are as thick as a man's wrist, and the inflorescence is coloured dark brick red with yellow base. The plant is really a glorified K. caulescens, much larger in all its parts and with darker flowers. A grandly effective species for warm and sheltered corners where its huge leafy rosettes may reach their finest development. It is more hardy than people imagine, and many grand plants thriving in the open without protection are known to me, which produce spikes 6 feet in height regularly every year. It is a rare plant of slow growth, yielding but few offsets unless injured. Propagation should be effected by means of seeds. Most K. Northiæ I have met are not quite true to type, showing evidence of hybridity with common species.

K. pauciflora (see Fig. 43).—A low-growing, sedge-like plant whose flower spikes are poor individually, but which are effective when massed. It is suitable only for cultivation on rockeries and the forefront of herbaceous borders. The spikes are arching, 2 feet in height as a maximum, and they bear pendant yellowish, short-tubed flowers from May onwards. Crossed with breviflora and others it has given me a race of nodding Kniphofias that resemble giant Lachenalias of singularly beautiful colouring, and which flower in two relays annually, once in mid-summer and again in September.

K. recurvata (præcox).—A sturdy species with handsome, erect-growing, arching leaves and flowers that resemble a very poor K. aloides in early summer. It has the misfortune to flower too early in the season, and the spikes are frequently damaged by late frosts in a nascent state.

K. Rooperi.—A very hardy and free-growing plant, forming handsome sheaves of broad, dark green foliage that is an ornament all the summer long in a sheltered position. The spikes are handsome, but are produced from September throughout winter, hence many of the best are spoiled by frosts. This is a grand plant for cultivation in warm counties, but on the East Coast, in the Midlands, and the colder parts of Scotland it rarely reaches its best condition, although flowers are produced in moderate quantities in mild winters. It grows about 3 feet in height, but is capable of much finer growth in warm districts. The scapes may be likened to those of a crimson K. foliosa.

K. rufa.—A delightful, new species that flowers all the summer long. It has the slight tufted growth of K. Nelsoni, and bears quantities of slender scapes supporting a refined inflorescence of long-tubed, elegant flowers coloured canary yellow in the lower series and coral red at the top of the spike. There are not many flowers on each scape, but the number of scapes and their elegant habit render this the most charming of Kniphofias for planting in borders. It appears incapable of producing seeds, and the pollen is often sterile. It is very hardy, and thrives in any soil.

K. Tuckii.—Another plant of the K. caulescent type whose glaucous, serrulate leaves are arranged in handsome Aloe-like rosettes, and whose flowers are produced in June and July. The inflorescence resembles that of K. caulescens, but is less hoary in appearance, the colouring being of brick red, with vermilion tips and Primrose yellow at the base. There are several beautiful colour forms in cultivation, and the plant appears to be capable of further improvement by selection of the best seedlings for perpetuation.

K. Tysoni is a kindred plant to the last-named species, but it shows greater refinement in the closely-packed inflorescence coloured a fairly bright shade of scarlet with yellow basal colouring. The foliage is arranged in splendid rosettes of a dark bluish green, with glaucous tips, and the spikes, which appear in June, are 6 feet in height. *G. B. Mallett.*

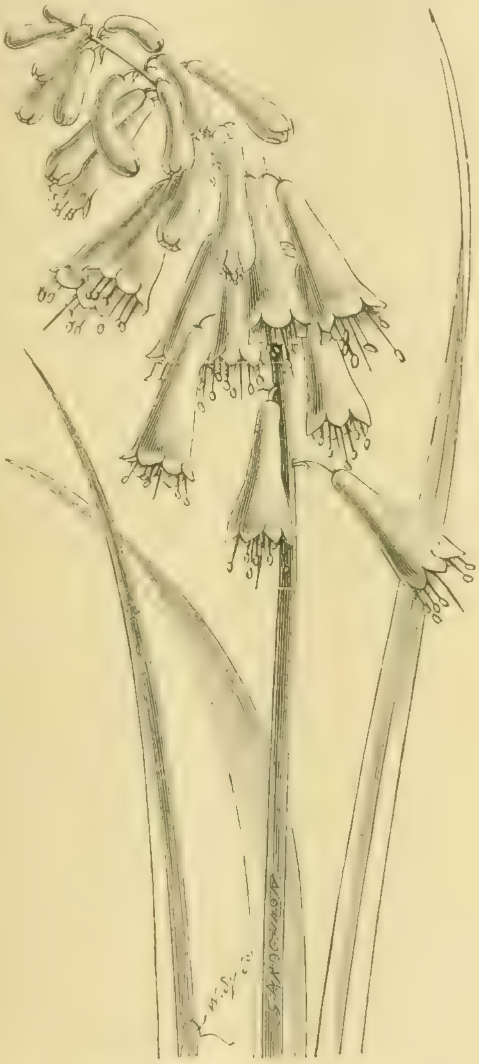

Fig. 43.—Kniphofia pacciflora, flowers yellow.

(To be continued.)

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from page 60.)

"TATIEN-LU AND THE QUEST OF MECONOPSIS INTEGRIFOLIA."

The town of Tatien-lu is situated in long. 102° 18′ E., lat. 30° 3′m., at an altitude of about 8,300 feet. By the most direct route it is 12 days' journey from the city of Kiating, and a similar distance from Cheng-Tu, the provincial capital, the routes converging at Yachou-Fu.

The first Britisher to visit the town of Tatien-lu was the late Mr. T. T. Cooper in 1868. Since that time it has been visited by many travellers —probably more than any other town in Western China. Much has been written, yet much remains to be told. The late Captain Gill, who visited the place in 1877, has given us a very good description of the town and its people.* More recently an American traveller, Mr. W. W. Rockhill,† and an English naturalist, Mr. A. E. Pratt,‡ have considerably increased our knowledge. The present town is built in the narrowest of valleys at the head of a gorge, down which the River Lu tumbles, falling some 4,000 feet ere it joins the River Tung, 20 miles distant. This torrent bisects the town, being crossed by means of three wooden bridges, and is joined immediately below the North Gate by another river, which flows from the north. The town is hemmed in on all sides by steep, treeless mountains, whose grassy slopes and bare cliffs lead up to peaks which culminate in perpetual snow. On the whole, the situation is about the last in the world in which one would expect to find a thriving town.

Formerly the town occupied a site about half a mile above its present one, but about a hundred years ago this was totally destroyed by a landslip, caused by a moving glacier. The old town was surrounded by a wall, fragments of which remain, and was evidently much larger than the present town. Tatien-lu is peculiar in that the only wall it possesses runs *across* the town near the South Gate, and in that many hundreds of blocks of stone with which the streets are paved are of the purest marble.

Tatien-lu is a small and filthily dirty place; it boasts a large mixed population of Chinese and Tibetans. Being on the highway from Pekin to Lhassa, officials are constantly passing and re-passing. This makes it a highly important place, both politically and commercially. Although Batang, 18 days' journey to the west, is the actual frontier town, Tatien-lu is really the gate of Tibet. The country between Tatien-lu and Batang is physically purely Tibetan. Politically, it is of a nondescript character, and is ruled by native chieftains. At Tatien-lu itself, there dwells a Tibetan chief of no mean standing. He is styled King of Djiala, and possesses much land and immense herds of yak. He has power of life and death within his own territory. His palace is spacious, and about 6 miles to the south-west of the city he has a country residence, fitted with stone baths, into which water is led from thermal springs.

This local king and the head Chinese official, styled Kiung Liang Fu, are supposed to be colleagues, but, in reality, the King is very much the subordinate. In my dealings with both, I found them very willing to assist, but suspicious and jealous one of the other.

Commercially, Tatien-lu is a most important entrepôt. It and Sungpan, in the north-west, have a monopoly of the trade between this part of China and Tibet. The Tibetans bring in wool, musk, hides, gold, and medicines, and exchange them for coarse brick-tea, tobacco, and trinkets, such as beads of inferior turquoise, coral, etc. Indian and Chinese rupees are the current coin, but much of the trade is done by barter.

The Roman Catholic fathers have been working in this neighbourhood for very many years. Since their expulsion from Tibet proper, about 1867, their Bishop (Vicaire Apostolique de Lhassa) has resided at Tatien-lu. In 1896, the so-called Tibetan band of the China Inland Mission, despairing of being able to enter Tibet from the Indian side, opened a station here. So far, they have not been able to enter Tibet any more from this side than they could from the Indian.

With these introductory remarks on this interesting border town, we will now turn our attention to things botanical. *E. H. Wilson.*

(To be continued.)

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* See *River of Golden Sand.*

† See *Land of the Lamas.*

‡ *Thro' China to Snows of Tibet.*

NURSERY NOTES.

THE ALMA NURSERIES, FARNHAM.

THESE nurseries, belonging to Mr. S. Bide, are mainly devoted to the cultivation of crops for wholesale supply. For instance, here can be seen 50 acres of Seakale, and such crowns, too, that one cannot imagine anything but success for those who make use of them. The natural soil here is specially well suited for the growth of this vegetable, and with Mr. Bide's system of deep digging and liberal manuring the growth is all that could be desired. Several span-roofed houses are being utilised for the forcing of surplus Kale under the most favourable conditions. Fruit trees are grown in large numbers. Worcester Pearmain, Mr. Gladstone and Cox's Orange Pippin Apples are favourites. A high opinion is being formed of Norfolk Beauty, which promises to be one of the most popular of kitchen apples. Mr. Bide has also quantities of shrubs and trees, many acres being occupied with Spruce Firs, ranging from 3 feet to 6 feet in height. There are Laurels in large numbers and breadths of Larch suitable for immediate planting. An additional nursery of some 20 acres of land a few miles away has recently been acquired to act as a feeder for the home nursery.

The range of glass is extensive. In addition to the cut-flower trade done here, many thousands of Roses in pots are grafted. Grafting commences in November, and continues until March. The batches of such varieties as Caroline Testout, Mrs. W. J. Grant, Dorothy Perkins, Kaiserin Augusta Victoria, and Lady Gay, appeared to be remarkably good. Great care is taken to keep them true to name and in the best of health.

Many thousands of Chrysanthemums are grown to meet the demand for cut flowers. Quite one of the best of late, yellow-flowered sorts here is Mrs. J. S. Fogg, of deep yellow with a tinge of bronze in it and a flower possessing much substance. As an extra late variety no better white flower than L. Canning has yet been found. Bulbs are a feature — 150,000 Narcissus being flowered annually. Emperor, Horsefieldii, Empress, Golden Spur, H. Irving, and Princeps are grown in quantity. A new variety of Ornatus, named Ornatus Grandiflorus præcox, was most promising. It is fully three weeks earlier than the type—and has more orange colour in the cup. It was introduced, I believe, by Mr. Baylor Hartland. N. Cervantes, with but little forcing, is also a desirable variety. House after house is filled with Palms, Begonias, Richardias, Ferns, &c., all in good health. Mr. Bide has the advantage of having three sons and a brother, all of whom take a deep interest in the business. Of Potatos many absolutely new varieties are on trial. Mr. Bide is a large Hop grower, as well as a farmer, and keeps 70 dairy cows of a choice description. *E. Molyneux.*

CULTURAL MEMORANDA.

ZONAL PELARGONIUMS.

THERE is nothing at the present season more cheerful in appearance than a span-roofed house filled with flowering Zonal Pelargoniums. Their bright and variously coloured flowers are delightful, while the suitability of the latter for table and other floral decorations render them almost indispensable subjects. Now that the time has arrived when their propagation may be commenced a word in reference thereto will be appropriate, for the sooner the cuttings are inserted now the better. For the purpose of furnishing cuttings a stock plant of each variety is usually kept, but this is not imperative, as cuttings can generally be procured from shoots of ordinary plants after the flowers have been cut, or they can be taken later—at the time the plants are cut back in February or March. Insert the cuttings singly in thumb pots in a soil containing a goodly proportion of sand, and plunge the pots in gentle bottom heat near to the glass. Keep the soil in which the cuttings are rooting, on the dry side, and afford a little ventilation. In March they may be shifted into 4-inch pots, using a rather heavy soil with which some well-rotted manure has been incorporated. Hoof filings from the smithy form an excellent manure for Zonal Pelargoniums, and they are also benefited by applications of manure water from the byres, as this will dissolve hoof and horn filings, especially when the manure water is fresh. Active growth must be encouraged in the plants throughout the season, and when June arrives they will have filled their pots with roots, when another shift becomes necessary, again giving them a rich compost. After the plants have fairly settled in their new pots they may be placed outside on an ash bottom, there to remain until about the last week in September. Never allow the plants to suffer from the want of water, and be careful not to let them root through the bottoms of their pots into the ashes. Constant removal of the flower buds and discreet pinching of the stronger shoots is essential to success. When housing the plants, and for about a month afterwards a sharp look-out should be kept for the green caterpillars, which destroy the leaves. The plants should be placed in an airy, somewhat dry house where plenty of light is obtained, and allowed heat sufficient only to keep the atmosphere moving. The plants will flower in profusion for several years in succession, provided they are allowed a period of rest, but one year, or at most two year old plants will be found the best. During the winter season watering must be performed with care, and a little soluble phosphatic manure may be added with good results. *H. W., Trevince.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Preparations for Shading.—The blinds or shading used on the Orchid houses should be at once fixed in their places to be in readiness for immediate use. It may happen that for a week or two there will be no need to use them, but the sun is becoming too powerful for some Orchids, especially when it shines forth in the middle of the day on such plants as Phalænopsis, Cypripediums, Bolleas, Aerides, Vandas, Angræcums, Odontoglossums, small seedlings, &c. At this particular time of the year every care should be taken to shade rare and delicate plants, as often irreparable damage is done before the grower is aware of it. After passing through several months of dull weather the plants generally are not in such condition to stand direct sunshine, as they are during the autumn months. The blinds on the East Indian, Cattleya, and Mexican houses may be fixed so as to roll down on the glass. As much sun heat as is possible without scorching is required in each division. Those on the intermediate and cooler houses should be raised by means of supports fixed to the roof to five or six inches above the glass. If arranged in this way a current of air will pass between the blind and the glass, which helps to preserve a suitable atmospheric temperature for the plants during hot weather. At Burford we use the lath roller shadings for all the houses, with the exception of the Phalænopsis and Masdevallia houses, these being covered with the ordinary canvas blinds.

Phalænopsis.—In the warmest house such plants as Phalænopsis Schilleriana, P. amabilis, P. Aphrodite, P. Rimestadtiana, and the supposed natural hybrid P. leucorrhoda are now in bloom. It is a critical time with these plants, great care being needed in supplying them with water. If kept too wet at the root, or if water be allowed to lodge in the centre of the growths, the leaves are liable to become spotted and diseased. Water should be afforded from a fine rosed watering can, or the fine sprayer, merely sprinkling the roots that are clinging to the baskets or pans often enough to keep them just moist, the sphagnum-moss that is near to the collar, or base of the plant, being allowed to remain on the dry side. Phalænopsis are often seriously or even permanently injured by carrying their flower spikes for too long a time. It is necessary to cut the spikes off after the flowers have been open for a reasonable period. It sometimes happens that the leaves of a plant will shrivel slightly before the flowers have opened, but if the spike is removed immediately the blooms are expanded, the leaves will soon become plump again when the plant is placed in a shady position and water afforded with judgment. The gradual increase of sun heat, and therefore of atmospheric moisture, will also greatly assist them to recuperate their strength.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Gardenias.—These are useful to supply flowers in the winter and spring months, but they are very accommodating, inasmuch as their flowering season can be advanced or retarded as required. If the plants are wintered in an atmospheric temperature of 55°, a few plants may from time to time be introduced into the warmer house, and if afforded an increased amount of moisture they will soon commence to expand the flower buds. Stimulate the plants by applying liquid manure and occasional dressings of Clay's Fertilizer to the roots. Keep a sharp look out for insects. G. florida intermedia is the best variety to grow for affording flowers for cutting, and should be given a place in every collection of stove flowering plants.

Gloriosas.—The old soil should be shaken from the tubers of these stove climbers, and the plants repotted in a mixture of light loam, good leaf mould, well decomposed manure and fibrous peat, with fine siftings of crocks and some sand to keep the whole porous. If the potting soil is in a suitable condition the plants will require no water until they commence to grow, after which a moist and heated atmosphere, with increasing supplies of water and frequent applications of weak liquid manure, will be found to favour their growth. These plants are trained up the rafters at Cleveley in a house in which Codiæums (Crotons) are grown. In this situation they are exposed to the full sunshine, the colour of the flowers being much improved with this treatment, and they also last much longer when used for dinner table decorations, for which purpose they are much admired.

Hard-wooded Plants.—Plants of Epacris that have finished flowering should be cut back, but not too severely, and be placed in a warm pit to induce them to break into new growth. When the young shoots have grown about two inches or so in length repot firmly any plants that require it. The same remarks and treatment apply to Ericas of the hyemalis and Wilmoreana type. At this season of the year mildew often attacks Ericas, and causes much mischief before it is discovered. As a preventive apply a light dusting of flowers of sulphur.

Mignonette.—Plants raised from seeds sown in the autumn, and that have been steadily growing, will now need to be repotted; but in doing this work do not disturb the roots more than is necessary. Good drainage is all-important, as the careful application of water is one of the principal items in the successful growing of Mignonette. These plants are very much benefited by lime, consequently a few pieces of old mortar rubble can with advantage be used in the drainage of the pots, while a sprinkling of fine siftings of the same material used in the potting compost will tend to keep the roots in a healthy condition. Good turfy loam, with dried cow manure that has been rubbed through a sieve, and a little soot, will form a suitable potting material. If grown as standards, restrict the plants to one straight stem until they reach the required height, when the side growths may be allowed to branch on to the trellis, after which frequent stopping and tying of the shoots will be necessary. The plants will be greatly benefited by occasional dressings of Standen's manure.

General Remarks.—A considerable number of flower seeds should be sown this month. See that the pots or seed pans are thoroughly clean, and provided with perfect drainage, after which partly fill them with some rather rough fibrous compost, and complete with a layer of finer soil, which must be made firm. Examine the seed pans at least once each day, preferably in the morning, as negligence when seeds are germinating may end in failure. Should the soil in the seed pans become dry after the seeds are sown, the safer plan will be to soak the soil, being careful not to float the seeds. Increase such plants as Dracænas, Bouvardias, &c., by cutting the stout roots into short pieces, or the stems into lengths containing an eye or two, and inserting them in soil in pots, which must be placed in bottom heat.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Late Vines.—In houses containing such varieties as Black Alicante, Lady Downes, and Gros Colmar, the work of pruning should be already completed. The wood-work should be thoroughly washed down with water containing soft soap and paraffin in order to kill or dislodge any insects that are lurking in the crevices of the wire-work and rafters. If the Vines were attacked last season with red spider, let the rods be washed with the same solution. Prick up the surface of the border with a fork, and apply a similar top dressing as was recommended in a previous Calendar for early fruiting Vines. The Vines may be started gently into growth towards the latter end of the present month, as very little saving in fuel can be made by postponing this until later in the spring. In such circumstances, should the following autumn be dull and sunless the Vines would require more artificial heat to ripen them. A Vine or two of the variety West's St. Peter's are very useful, especially for "invalids," as the fruits have very thin skins and are rich and juicy. They ripen in October, and will keep in good condition until March. It sometimes happens that with the grapes being kept on late Vines until January, the borders become rather dry, and if this be so water should be applied to them before forcing commences.

Tomatos.—If the winter-fruiting plants are clean and in good health, they may yet be encouraged to yield a few more fruits. Apply a top dressing of turfy loam and bone-meal, and now that the days are lengthening and the sun is gaining more power, a little extra air may be admitted to the house during sunny days. Plants raised from seeds sown in the last week of December are now ready for the final shift into 8 or 9 inch pots. Use a compost consisting of three parts rather strong loam, adding some manure from an old mushroom bed, wood-ashes, lime scraps, and a sprinkling of bone-meal. These plants when repotted should be placed on a shelf not far from the glass, placing a grass turf under each pot, which will help to keep the roots in a moist condition and form a bed for them to ramify in after the pots have become full. The plants require an atmospheric temperature of 60° at night, but a rise may be permitted during the day. Leave a space of fully two inches in each pot to allow of a top dressing being applied when the first bunch of flowers have set.

Early Peach Trees.—Continue to disbud these trees, taking care to leave a shoot at the base of each bearing shoot, and another at the extreme end. Those which are retained for supporting the fruit should be pinched back to the third leaf, but the basal growth must be trained in for next season's bearing wood. Exercise care in ventilating the house, so that there will not be currents of cold air. Where there is very much bloom, some of the flowers may be taken off, and those remaining will thereby be benefited.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Annuals, and tender bedders in the Rosary.—Despite a prevalent prejudice against planting amongst the roots of roses, or in fact growing anything but roses in the Rosary, it is now generally admitted that the use of any light-rooting annuals or bedders to hide the bareness of the bed is conducive of little harm to the roses, while the improvement in effect is incalculable. There is no doubt that Rosaries in the past lost much in effect by the beds being too thinly planted, and the display of flowers marred by the appearance of the unsightly manure and bare ground beneath the plants. The Rose beds should be planted in April or May with whatever it is decided to cover the surface of the ground, so that by the time the roses come into bloom the soil will be hidden. By the end of September, or whenever circumstances permit, the beds can be cleared again of these decorative plants, and a heavy dressing of manure applied to make good the additional drain which has been put upon the soil's resources during the summer months. Dwarf plants similar to Lobelia pumila, tufted Pansy, and Phlox Drummondi are admirably adapted for use as surface bedders. Of the Lobelia, the dwarf compact growing blue varieties are best, and they can be easily raised by thousands from seed. The seed should be sown now in heat, in shallow boxes and very thinly to avoid "damping off." In a few weeks' time the seedlings can be pricked out singly into slightly deeper boxes, and by the end of March, or beginning of April they will be ready for transferring into boxes of still larger size in which they will remain until planting-out time. In putting them into these last boxes give sufficient space between the plants to allow of them making a "tufted" habit of growth. The blue of the Lobelia harmonises effectively with orange yellow coloured Roses, or with such copper coloured Roses as L'Idéal or Ma Capucine, so should be used as a foundation or surface plant for beds filled with Roses of this colour. A purple variety of "tufted Pansy" harmonises with yellow roses. As a contrast, white Roses and blue Lobelia go well together. For planting below the different shades of red Roses, Phlox Drummondi, in the desired shade of colour to harmonise, is an excellent subject, but it requires constant attention. It will be necessary to go over the beds containing the Phlox Drummondi at least twice a week, as soon as the plants are established, to thin out the growths, and peg them down, otherwise their vigorous growth would prove detrimental to the Rose by completely smothering those of weakly habit. The white "tufted Pansy" makes a good contrast for a bed of red Roses, and so does any green-foliaged carpeting plant.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Standard Apple and Pear Trees.—The present is a good time to prune and cleanse these trees. The pruning is necessary for relieving the trees of superfluous wood, such as dead and decaying branches, and for cutting back all weak growths. Scrape away as much as possible of the lichen on the trees, and afterwards spray the trees with the XL-all wash. Those contemplating making a new orchard would do well to plant the ground with Potatos. It will not then be unproductive all the season, but will be made clean ready for planting in next October and November. Choose a site on moderately high ground where there is some available shelter from winds; the soil should be of clayey loam and be well drained, either by natural or artificial means. Select the varieties of fruits carefully, choosing some that will ripen early, in mid-season, and late, but, above all, select those varieties that have proved themselves to be most useful and serviceable in the locality. For use at the present season we have no better Apple than Dumelow's Seedling (Wellington), an Apple of moderate size and good flavour and cooking quality. It is also a good cropper. For some time past the fruits have been quoted in the markets at from 8s. to 14s. per bushel, and at a quarter of this rate they would be very remunerative. In order to obtain satisfactory crops it is necessary to treat the ground well and leave nothing to chance.

Pear Trees prove very remunerative when good and suitable varieties are planted on well-drained ground. I have seen bushels of Pears lying on the ground in country places, the owners not knowing how to dispose of them, and thinking the Pears worthless because they were hard.

Standards of Plum, Damson, etc.—Thin out the shoots of these trees and shorten the strong growths.

General Work.—Proceed with the pruning and nailing of trees generally. Take advantage of wet days to get shreds cut, stakes sharpened, covering material overhauled and repaired. Protect Pear, Gooseberry, and Currant trees from birds. Remove all decayed fruits from the fruit room. Admit a little air at all times to dispel damp. Apples and Pears are keeping well this season. Pear Olivier de Serres is in capital condition just now.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Onions.—Failure in this crop, owing to the attack of the Onion fly, are more frequent in the north, especially in cold districts, than in the south of the country, which is owing to the young plants being in a less advanced stage of growth at the season when the fly is breeding. The plants are not so readily attacked when they are older, therefore no better system can be practised in these districts than that of sowing the seed thinly in boxes in gentle heat, growing them on steadily and hardening them off by the end of April, when they can be planted out of doors in lines drawn at 15 inches apart, putting each plant six inches distant from its neighbour. There is no necessity to prick off the seedlings into other boxes or to cultivate the plants so highly as would be necessary to grow exhibition Onions, but they may be transferred direct from the seed boxes to the open ground. A far greater weight of produce will be the result, and the bulbs will not be so large in size as to injure their keeping qualities. They will be earlier and much more likely to be immune from the attacks of the fly. In more favoured districts Onion seeds may be sown out of doors towards the end of February or early in March, according to the condition of the weather and soil. Young Onion plants are not readily injured by frost, but are more easily ruined by excessive moisture, therefore those who have light soil can sow before those having soil of the opposite character. In any case it should be deeply worked and contain plenty of manure. Choose a fine day and fork over the space to be sown, adding at the same time a heavy dressing of soot. Let shallow lines be drawn at distances of 12 inches apart, just allowing a sufficient depth that the seed may be covered a quarter of an inch deep. A sowing of wood ashes on the seeds before covering them is an excellent practice. The old variety James' Keeping is still one of the best to keep in good condition a long time, together with Veitch's Main Crop and Sutton's A1, all of these being most suitable for this method of culture. Silver Queen is an excellent variety for use in pickling, and a few rows of these should always be sown, as the bulbs are better for the purpose than the small ones picked from the other varieties mentioned would be.

Leeks.—The main sowing of Leeks should be made at the same time and in lines in the same manner as the Onions. Make sure of a good tilth in order to get strong plants to transplant as early as possible. More often than not this crop is not transplanted sufficiently early to yield the best results. Musselburgh is still one of the hardiest and best to stand the winter. Sutton's Royal Favourite has intense green leafage and is thoroughly hardy; it has the advantage of thickening early, is of medium length, and becomes ready for use in advance of many other varieties.

Garden Paths.—Now that all the wheeling and heavy traffic incidental to winter is nearly done, attention should be given to the edgings. If Box requires relaying it should be done at once. Do not allow this edging to become overgrown, and thus afford a harbour for slugs, etc. Box, if well laid and trimmed annually, is, I think, the best form of garden edging, but in soils where Box will not succeed, ornamental tiles may be recommended. These should be laid deeply in concrete, otherwise they may be easily broken by accident. Gravel paths are improved in appearance by an annual sprinkling of fresh material. This will cost no more expense than is entailed by a heavy dressing every third year. Attend to the edgings of grass paths and returf any bare patches. A top dressing of very rotten dung if put through a sieve and applied to the turf will effect much good.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

FRIDAY,	Feb. 23	Roy. Botanic Soc. meets.
SATURDAY,	Feb. 24	Dutch Gardeners' Soc. meets.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick—39·3°.

Actual Temperatures:—

London.—*Wednesday, Feb.* 14 (6 p.m.): Max. 46°; Min. 29°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 15 (10 a.m.): Bar., 29.6; Temp., 44°; *Weather*—Much rain.

Provinces.—*Wednesday, Feb.* 14 (6 p.m.): Max. 45° Cornwall; Min. 36° S.E. Scotland.

SALES.

MONDAY—

Thousands of Hardy Border and other plants, Roses, Lilies, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY—

Lilies, Hardy Border plants and perennials, Gladiolus, &c., at 12; 3,000 Roses also Fruit Trees at 1 and 3. Greenhouse plants, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

Clearance Sale of Nursery Stock, Greenhouses, &c., at the Nursery, Castle Road, Southsea, by Protheroe & Morris, at 12.

Sale of Palms, Roses, Lilies, &c., at Stevens' Rooms, King Street, Covent Garden, London.

THURSDAY—

945 cases Japanese Lilies received direct, also Lily of Valley, Palm Seeds, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 3.

FRIDAY—

Herbaceous plants and perennials, Hardy bulbs, Pink Carnations, Roses, Azaleas, &c. Imported and established Orchids from various sources, Orchids in flower and bud, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

The Royal Horticultural Society. In the face of the Report—the greater part of which was given in our columns last week—it is not wonderful that a tone of satisfaction prevailed at the annual meeting of the R.H.S. on Tuesday last. What was there to do but to express gratitude to Baron Schröeder, the veteran who persisted that we must have a hall, and kept on persisting till, largely through his generosity, the hall is an accomplished fact, and everyone is praising its commodiousness and convenience? What was there to do but again record our acknowledgments to Sir Thomas Hanbury, to whom we owe the delightful garden at Wisley, with all its potentialities? What was there to do but recognise thankfully the services of Mr. Wilks, Mr. Wright, Mr. Reader, and of the staff generally? No less imperative was the duty of showing our appreciation of the services of the President, so long and so unwaveringly given, through bad times as well as in the present state of prosperity.

Sir Trevor Lawrence commented on the report in terms that we need not here repeat, and Mr. Gurney Fowler, the treasurer, made one of those excellent, lucid statements as to the financial condition of the Society which inspire so much confidence. The amount of profit made in 1905 was, he told us, no less than £6,203, and then he went on to say how the money had been spent on the hall, and at Wisley—and clearly well spent too. The fly in the pot of ointment was the heavy loss entailed by the summer show at Chelsea. The show was a good one, the weather unexceptionable, the site beautiful, but the attendance of the public very unsatisfactory. This may have been because sufficient publicity was not given. In any case, the public lost a fine opportunity, and the Society suffered a loss which was, as far as they were concerned, quite unmerited.

Mr. Elwes, in supporting the motion for the adoption of the report, suggested the advisability of a publication committee to assist the editor of the journal. Whether the editor would care to be hampered in this way is doubtful, but, at any rate, the practice of other societies of appointing expert referees to report confidentially to the council or to a publication committee as to whether certain articles should, or should not, be inserted might, if adopted, relieve the editor of some responsibility and tend to reduce the present bloated volumes to more reasonable dimensions.

The distribution of plants to the Fellows from Wisley also came under discussion. The present system involves an amount of trouble wholly disproportionate to the benefit to horticulture and, to some extent, perhaps, is inimical to the interests of the trade. There are certain plants not generally in commerce, or of special interest, which might advantageously be propagated for the benefit of the connoisseurs—and, for the rest, the society should not compete with the members of the trade.

The most interesting feature of the day was the election of four new Victoria Medallists of Honor in place of a similar number deceased. When we say that the new recipients of the honor included Mr. Harry J. Veitch, Mr. William Marshall, Mr. R. I. Lynch, and Mr. J. Smith, of Newry, we feel that our readers will add their plaudits to those which made the room ring on Tuesday last. It will doubtless occasion some surprise to realise that some of these gentlemen have not long ago been entitled to write V.M.H. after their names, but as they were members of Council, they may have thought it right to waive their claims. Be that as it may, their rights will be recognised universally.

The Right Hon. Lord Balfour of Burleigh and the Right Hon. the Earl of Tankerville were elected members of Council, and Major Holford, C.I.E., C.V.O., and Mr. Henry B. May were re-elected.

Our Supplementary Illustration to the present issue affords a view of a portion of the Royal Gardens at Sandringham that has not been previously illustrated in these columns. It is known as the Queen's "Wild Garden," and being situated only a very short distance from the mansion, affords a very pleasant contrast to the more formal flower garden, and an agreeable retreat from bright sunshine. In our Coronation number published in 1902 reference was made to this feature of the Sandringham gardens, and though certain modifications in the planting have since been made, and various improvements carried out, as in the substitution of an irregular stone path for the much worn path of turf, the general effect is of the same character. In the view photographed, some of the principal objects include the great Thistle, huge Lavender bushes, Rosemary, and herbaceous flowering plants that help to brighten the more sombre effect afforded by the many trees and shrubs. It is worthy of remark that, apart from any dissimilarity there may be in the colours of the numerous shrubs, there appears to be an infinite contrast in the forms of leaf and habit of growth of the various plants.

The Factory Act and the Florists' Shops.—It appears from an advertisement in our last week's issue that an attempt is being made to bring florists' shops under the provisions of the Factory Act, and thereby to subject the proprietors of those establishments to regulations and restrictions which would "practically make the business of a florist impossible." It is to be hoped that the real state of the law will be speedily determined. For this purpose the Florists are combining among themselves to assist any one who may be prosecuted under the Factory Act. The names of the following well-known Florists are appended to the document:—Messrs. Goodyer, Piper & Son, Strudwick, Taverner, Wills & Segar, Brooks & Son, Butler, and Robert Green.

Mats on Garden Frames. — Mr. F. G. Brewer, of Bryntirion Gardens, Dolgelly, Merionethshire, N. Wales, sends us a sketch of an iron appliance for fixing mats on garden frames. One end of the iron is fixed to a corner of the frame, and a strip of board passed through on the top of the mats makes the covering secure.

American Carnations.—The great improvement of these in recent years is attributed by the President of the American Carnation Society to increased size of flower, longer duration, and greater variation of colour—we think we may add, greater length and stiffness of stem, and hope that no further increase of size will be looked on with favour, but that enhanced fragrance may be ensured.

The late Shirley Hibberd.—It may be remembered that on the death of this genial and much respected member of the horticultural fraternity a subscription was raised for the benefit of his only daughter. The sum originally subscribed was £232 16s. 9d., which was invested in the hands of trustees for her benefit. Now that the lady has attained a majority steps are being taken to transfer to her the sum of £324 7s. 6d.

The National Potato Society. — The annual report for 1905 is very interesting and very suggestive. The reports of shows are only of passing interest, but the carefully-compiled records of experiments made in various counties are of permanent value. The experiments have reference to the trial of newly introduced varieties, to the determination of synonymous forms, or, at least, of such that are so like some others, as, for practical purposes, to be treated as identical. The relative powers of resistance to disease are also tested, and the advantages of "change of seed" brought to light. The trials in any one year, however accurately conducted, cannot be accepted as absolutely satisfactory, but a series of such trials in the same localities spread over a number of years will certainly elicit most important results. The report can be had from Mr. W. P. Wright, Postling, Hythe, Kent.

Packing Seed for the Tropics.—The need of proper packing for seed intended for transmission to tropical countries is one that should receive full attention from those concerned, yet is but too often neglected. Mr. J. H. Hart, writing in the Trinidad *Bulletin of Miscellaneous Information*, mentions this important matter, which has lately been the subject of discussion in our columns:—"While in England, from May to July, 1905," he says, "I interviewed one of the principal officers of the firm of Messrs. Sutton and Sons, of Reading, with reference to suitable seeds for tropical use, and was successful in showing him the need for better packing when sending them from temperate climes. What are required are sealed packages after the form of biscuit tins to secure the seeds from damp and small insects. This enterprising firm are now packing seed in small quantities for immediate use in fine or thin metal containers, which are hermetically sealed in dry air. The packages cost one penny each more than the ordinary paper envelopes, and the seeds are preserved in a fine growing condition some 100 per cent. longer than by the old method, and will not perish while in the hands of the seedsman who undertakes their sale locally. The firm, I am informed, has arranged with Messrs. STEPHENS & SCOTT, of Port-of-Spain, to distribute for them as local agents in Trinidad, and it is now certain that growers can obtain seeds of fine quality and reliable vitality. This method of packing will enable growers to keep their seeds until required quite free from the attack of insects and secure from the effects of climate. The packages can be readily opened when necessary and should obtain a ready sale in this colony."

SCOTTISH HORTICULTURAL ASSOCIATION.—The inaugural address by the President, Mr. DAVID W. THOMSON, was mainly devoted to the subject of change—change in fashion, change in taste, change in material, change in circumstances. The lecturer alluded to the comparative decline in the culture of stove and greenhouse plants, and to the rise in favour of hardy herbaceous plants, of Narcissi, of Chrysanthemums, and Carnations. With Grapes to be bought at 1s. a lb. the lecturer predicted the gradual decrease in the culture of the Vine, just as imported Pines have in many cases caused the disappearance of Pine stoves. Mr. THOMSON strongly urged upon the young gardeners that they should watch the signs of the times, keep pace with the fashion, and devote more of their attention to outdoor gardening. Change also was observable in the climate, for lately it had been as warm as or warmer at Stornoway than at Nice. We remember the late Mr. MCNAB making a similar remark many years ago, but since then we have been subjected to two of the most rigorous winters known even to the oldest inhabitant, so that prognostications as to climatal change need to be made with hesitancy. One point was alluded to by Mr. THOMSON in which there had been little change, and that is in the wages paid to gardeners. The gardener's position and remuneration are not adequate to the forethought, responsibility, and intelligence required of him. In all these points the gardener is at a disadvantage as compared with other workers from whom less is expected. Lastly, progress and efficiency were pointed out as the objects to be aimed at in the future. Mr. THOMSON'S address will doubtless be published in full in the Transactions of the Society. In the meantime we call attention to it as full of interest and sound advice to young gardeners.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are informed that the Liverpool Auxiliary of this Institution has arranged to hold its fourth annual concert, in aid of the funds, on February 24. Dr. G. W. MC FALL, M.B., lecturer on Botany, will preside, and a good programme of music will be carried out. The secretary is Mr. R. G. WATERMAN.

ROYAL GARDENERS' ORPHAN FUND.—We are glad to note that the report and balance-sheet presented by the committee at the annual general meeting of the subscribers to this institution held on the 9th inst. was generally satisfactory. The receipts from all sources—and from each source (excluding legacies) — showed an increase over those in previous years, and the help that it had been found possible to afford to necessitous orphans was greater than ever before. At the same time, we cannot help remembering that whereas several years ago the Fund was able to meet all applications for relief, it is quite unable to do so at the present time, for if the receipts are larger the demands for assistance are much more numerous. And in connection with this lamentable fact, it has been pointed out again and again that if gardeners could be brought to recognise their responsibilities in respect to the Fund, and would subscribe but five shillings each year, it would not be necessary to turn empty away a single child who needs assistance. Let our readers remember this, and also that, however unlikely it may appear at the present time, there is the possibility that at some future period their own children, or the children of some friend, may be among those for whom help may be asked from this same Fund. Therefore, whilst it should be only necessary to appeal for annual subscriptions on the highest ground, and by awakening in gardeners a practical sympathy for those among them who may suffer misfortune, the further fact can be stated that in many cases the sum subscribed will prove to have been well invested. Subscribers will be sure to approve of the election by resolution of three candidates who in peculiar circumstances had been unsuccessful at the poll, and also agree with the announcement in the report in respect to the acceptance of two candidates at one time from one family.

HORTICULTURAL PORTRAITS. — It is well known that the late Mr. RICHARD DEAN had made a very extensive collection of portraits of horticulturists, without doubt the most considerable one in the kingdom. This collection it is much to be desired should pass into the hands of some individual or of some body willing to preserve them for their intrinsic interest and value. The Royal Horticultural Society did some time since, yet subsequent to Mr. DEAN'S death, endeavour to secure the collection as likely to make an interesting addition to the Lindley Library. The offer was made, but was unfortunately declined. That leaves open to anyone desirous of possessing this unique collection the opportunity to make an offer for it. Mr. DEAN was far from being a rich man. His was a life of indomitable industry and hard work to the last, yet it was one that did not enable him to accumulate wealth. Hence the necessity of asking a substantial sum for the collection of portraits. Enquiries may be addressed to Miss DEAN, 7, Marlborough Road, Ealing, W.

WINTER FLOWERING CARNATION SOCIETY.—On the 13th inst. a meeting of Carnation growers and others was held at the R.H.S. Hall, Westminster, to discuss the advisability of forming a Winter Flowering Carnation Society. A provisional committee was formed, to make enquiries amongst growers and to report to a general meeting, to be held in May. The following are members of committee:—Messrs. W. E. BOYS, Leicester; J. S. BRUNTON (Chairman); H. J. CADMAN (T. S. Ware, Ltd.); H. J. CUTBUSH, London; A. F. DUTTON, IVER, C. E. ENGELMANN, Saffron Walden; LOW (Hugh Low & Co.); S. MORTIMER, Farnham; and HAYWARD MATHIAS, Thames Ditton (Honorary Secretary).

PUBLICATIONS RECEIVED.—*Native Guano.* Results of its practical Application in the Farm and Garden.—*Agricultural Bulletin of the Straits and Federated Malay States*, October. Edited by H. N. Ridley. Contents: Position of Rubber among Cultivated Plants, Rubber Diseases, Rubber Notes by the Editor, &c.—From the University of Illinois, Agricultural Experiment Station, Urbana, November. Bulletin 104: *Field Experiments on Insects Injurious to Indian Corn*, by S. A. Forbes.—From the United States Department of Agriculture, Bureau of Plant Industry. Bulletins: 84. *Seeds of the Blue grasses*, by Edgar Brown and F. H. Hillman.—85. *Principles of Mushroom Growing and Mushroom Spawn Making*, by B. M. Duggar.—87. *Disease Resistance of Potatos*, by L. R. Jones.—89. *Wild Medicinal Plants of the United States*, by Alice Henkel.—No. 90. Part II. Crowngall & Hairy.

EXCHANGE SEED LIST RECEIVED.—Delectus seminum ex horto Cantabrigiensis Academiæ ad mutuam commutationem propositorum. Application should be made to the Curator, Mr. R. Irwin Lynch, M.A.

NOTICES OF BOOKS.

GARDENING IN INDIA.

MR. JOHNSTONE, the manager of the Himalayan Seed Stores, Mussooree, has published a "Guide for Amateurs." The book is arranged alphabetically, beginning with Artichokes and ending, so far as vegetables are concerned, with Vegetable Marrows, Potatos being conspicuous by their absence. Flowers are treated in the same way. Brief general descriptions are given and hints afforded as to the best method of cultivating each variety named. In addition, monthly calendars of operations for the plains, as well as for the hills, are given. The illustrations are, some of them, venerable friends that did duty in seedsmen's catalogues half a century ago, but others are more "up to date." A general index and an index of vernacular names add to the utility of this unpretentious little book.

THE ALPINE GARDEN.

"GALANTHUS GOTTWALDI."

UNDER the above name bulbs of a Snowdrop were received at Kew from Mr. W. Siehe, of Messina, during last autumn. When the plants flowered in the Alpine house at the beginning of the year they proved to be identical with G. byzantinus, although the examples in flower were very weak as compared with this usually robust species. The bulbs, however, were small when received, and the flower may improve another season. The plant possesses the distinct plicate leaves peculiar to both G. byzantinus and G. plicatus, but in the marking of the inner segments of the flower it agrees with the former species. These two species resemble each other to a great extent, the chief difference being in the green markings on the inner segments. In G. byzantinus the apex, as well as the base of the inner segments, is marked with green, as in G. Elwesii. In G. plicatus the apex only is marked with green, as in our native G. nivalis. The origin of G. byzantinus is somewhat obscure. It was introduced in the year 1893, and was said to have been found near Constantinople. Mr. Baker described it and gave it its name. G. plicatus, the "plaited Snowdrop," is a better known plant, and is found in the Crimea and in the Caucasus. G. byzantinus appears to be intermediate between G. plicatus and G. Elwesii, with the leaves of the former and the flowers of the latter species. Whether a natural hybrid or a species remains to be proved, as the origin of both G. byzantinus and G. Gottwaldi is doubtful, Mr. Siehe stating that he received the latter from Holland under that name. *W. I., Royal Gardens, Kew.*

VEGETABLES.

WEBB'S JEWEL TOMATO.

I CONSIDER this variety as the best red Tomato for general use and for exhibition purposes. It is almost round in shape, of medium size, and of a lovely red colour. I am still gathering fruit from plants raised from seeds sown last June; and having to furnish a supply of these fruits all through the winter months, I find this by far the best variety for the purpose. I can also recommend it for its free setting and heavy cropping qualities, the plants being literally covered with large bunches of fine, well-flavoured fruits.

WEBB'S MASTERPIECE ONION.

As the season is now at hand when the main crop of Onions should be sown, it is advisable, if not already accomplished, to thoroughly trench the ground 2 feet or more in depth, as the soil for this crop cannot be too rich, nor in too fine a condition. The seed bed should be made quite firm by treading or rolling previous to sowing the seed, whether broadcast or in drills. If grown in rows, the lines should be 12 inches apart, and the young Onions, when large enough, thinned to about 6 inches apart, according to the variety grown. During long periods of dry weather a good watering is most beneficial. Growers of Onions for exhibition purposes usually transplant the seedlings, and this is almost a sure means of checking the Onion grub, so prevalent in some districts. Having grown all the leading varieties, both for exhibiting and for culinary purposes, I find Webb's Masterpiece one of the best. It is a handsome globe-shaped variety, growing quite as large as Ailsa Craig. The flesh is white, of mild flavour, with a pale yellow skin. *R. Milner, Margam Gardens, S. Wales, February 1.*

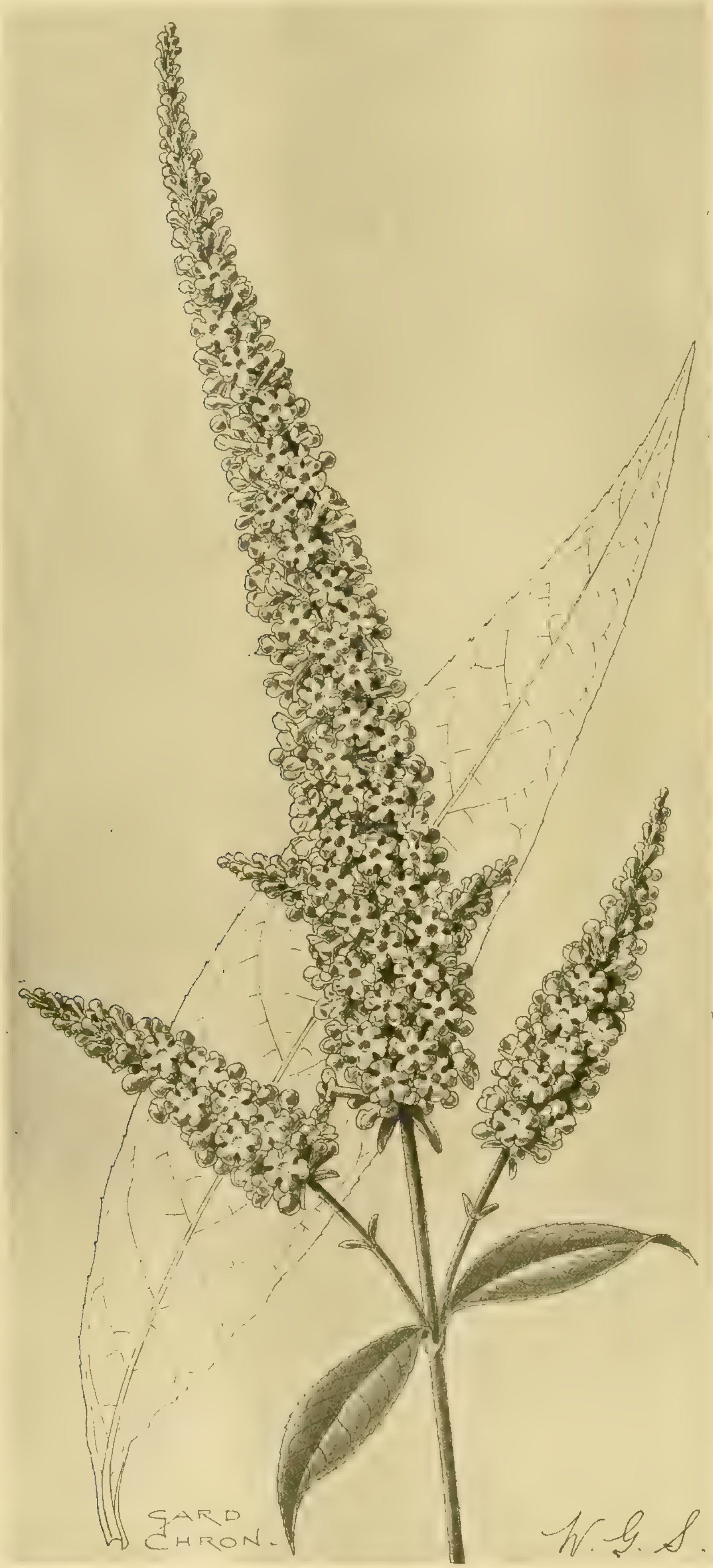
GARD CHRON.
W. G. S.

FIG. 44.—BUDDLEIA ASIATICA, FLOWERS WHITISH.

BUDDLEIA ASIATICA.

We publish the following note on this species, from Mr. Alwin Berger, La Mortola, Ventimiglia, Italy :—

" Mr. E. W. Wilson has published in the December number of *Flora and Sylva*, a full account of the Buddleias now in cultivation. He says much in favour of this species, B. asiatica. It was cultivated in England as long ago as 1874, and was figured in 1877 in the *Botanical Magazine*, tab. 6323, but was lost again until its re-introduction by Mr. Wilson.

We received a young plant here last spring, which was planted about May, in a sunny place. It is now a bush over 2 feet high, having every shoot terminated by its long flowering racemes. It is not so much for the beauty of these flowers that the plant deserves to be recommended as for its general appearance, its flowering season, and fragrance. Moreover, plants flowering about the end of the year and continuing for a long time cannot fail to be welcome.

All this makes the plant a valuable addition to our garden flora, chiefly for the south or in other favourable situations, where it can be grown in the open. The species will certainly make its way into every garden along the Riviera and not again be lost."

Our illustration at Fig. 44 is reproduced from a sketch made by Mr. Worthington G. Smith, of specimens exhibited by Messrs. Jas. Veitch & Sons, at the Royal Horticultural Society's meeting held on January 23 last.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Examinations in Horticulture.—It is doubtful whether such examinations as those held by the Royal Horticultural Society are of much value as a means of training in professional horticulture, or even as a test of knowledge of the principles and practice of the art. Would any practical gardener attach any importance to the success or failure of a young man at an examination in which he is asked to explain or describe the structure and growth of cells, the process of impregnation of the ovule and similar academic questions? And even the more practical questions, such as the description and use of implements, manures and their application, are worthless as tests of anything except perhaps memory. This sort of thing has about the same bearing on gardening as questions on the varieties and special uses of saucepans, the origin and chemical constituents of salt, or the effects of heat on vegetable and animal tissue have on cooking. Of course the college students who know little or nothing of gardening do well at the Royal Horticultural Society's examinations, whilst intelligent, experienced young men of proved ability in the garden rarely get into the first class. Take, for example, the result of the 1905 examination. Of the 160 candidates 76 were from horticultural schools, and the whole of the 20 that obtained firsts were school-students, chiefly from Swanley and Studley, which are for girl students only. This class-room gardening may be of some use, but it is no proof of real gardening ability, or even aptitude. It is impossible to devise a scheme of examination to be conducted in a class-room that would be a satisfactory test, and I rather fancy the examiners know that as well as I do. A gardener requires just that kind of knowledge of his art, and skill in its practice, as will enable him to obtain the best results as a cultivator. He may not be able to give satisfactory answers to any of the 24 questions asked and yet be a champion gardener. I am only concerned to protect the gardener from the imputation of ignorance or want of skill in his profession because he fails in class-room questions, and that things are tending in that direction is to be seen in the action of the London County Council in making the Royal Horticultural Society examinations a test for promotion among its gardeners. Would any responsible gardener or nurseryman select the members of his staff on such lines? I have had many years experience in sorting men for all kinds of positions in horticulture, and I know the danger of being too much influenced by tongue or pen work. In horticulture we want men who are able to *do* things, and if we are going to prefer the training of the schoolmaster and lecturer to that of the gardener we shall get into the same mess as those military leaders found themselves in when well-schooled officers were pitted against field-made men in the Boer war. If we are to have tests in horticultural training they should be real and not sham. The horticultural colleges may be doing useful work, though one wonders where it reveals itself; so far as I can see it is not in any practical field; still, the training they give may be at least as useful as other things taught in schools; but this output should not be confused with the genuine article, much less considered superior, and that is the danger which I see. *W. Watson, Kew.*

Mutual Improvement Societies. — The federation of the numerous Horticultural Mutual Improvement Societies into one body having a central depot would be a means of furthering the objects which the individual societies have at heart. If such a scheme meet with the approval of the members of these various bodies I suggest the adoption of the following proposals by the Federation :—(*a*) An interchange of lecturers in districts within a given radius. (*b*) The formation of societies in districts in which no society exists. (*c*) An affiliation to a recognised federation would create the *locus standi* of each of the societies affiliated. (*d*) To bring before employers and employees the advantages of these improvement societies to both. (*e*) To institute a labour bureau for gardeners, with a registration of situations vacant and wanted. [Is not this work already carried out by the British Gardeners' Association?] (*f*) The meeting of delegates from each society at a conference, held annually, or oftener if desired, when matters relating to their separate societies could be brought forward and discussed. The society I have the pleasure to serve as honorary secretary is in unison with my views. *Hon. Sec. of the Croydon and District Society, 62, High Street, Croydon.*

Carnation "Coronation."—[See enquiry on p. 95.] This variety was shown by Mr. A. Smith, of Enfield Highway, at the National Chrysanthemum Society's Exhibition at the Crystal Palace on November 1, when it received an award of merit. I have not seen it in any other collection. Mr. Smith stated that it was one of his own raising, but I do not know if he has put it into commerce or not. I have since seen a large stock of "Liberty" in another nursery. This variety also was shown by Mr. Smith on November 1, and gained a first class certificate. *A. H.*

A good Cattleya.—I send a spike of Cattleya Trianæ delicata which is flowering in the collection here. The plant from which it was cut has ten pseudo-bulbs, the largest of which produced this enclosed spike. This spike measures with leaf combined 22 inches, the bulbs in the thickest part being 3 inches in circumference. The spike originally had four flowers. *F. C. Puddle, gardener to W. H. St. Quintin, Esq., Scampston Hall, Yorks.* [A capital specimen. Ed.]

Conifers for Large Groups.—*H. W.*, p. 69, directs attention to Conifers for grouping, and also mentions the mistake of planters of sixty years ago in not giving each tree sufficient room for full development. The former lack of knowledge in this respect is apparent to-day in many private grounds, where one may often see examples that would have been far finer trees, if, at planting time or later, sufficient space had been afforded them. Planters of to-day have a knowledge of the probable space such Conifers will cover, and therefore such errors should not be repeated. That a group of the Conifers "H. W." mentions presents a grand and beautiful appearance is without doubt, but they must have ample room for their true beauty and fine proportions to be seen. And "H. W." omits one important point in not saying what amount of space should be allowed between each specimen. A most beautiful effect is produced by a group of Thuia gigantea and Cupressus nootkatensis, but these two species do not require so much room as groups of Pinus excelsa or Pinus insignis. At Poltimore examples of these last-named cover a space of 64 and 61 feet respectively, and for trees which have attained to these dimensions 40 feet between each specimen is not too much to allow. It is doubtful if Araucaria imbricata will cover a space of more than 36 feet through, as by the time this size is attained the lower branches will begin to die off. Picea Smithiana at 50 years of age covers a space of 36 feet. The Deodar, with a diameter of 60 feet at a similar age, affords another example. Close planting of Conifers will restrict the spread of the branches, while the provision of ample room between the specimens will encourage branch extension. *T. H. Slade, Poltimore.*

To Brighten Beds of Azaleas, Rhododendrons, &c.—Your correspondent *R. M.* at p. 91 makes a curious remark with regard to the plants which I named on p. 46, as being suitable for the purpose required, in that they have, as he states, "a beauty of their own at all seasons of the year." Why should that be an objection to their use to brighten shrubs when the latter are not in flower? Besides, there are beds of Azaleas and Rhododendrons that contain hundreds of plants, as at Dropmore and Bagshot Park; and others which are filled with a few dozens of small plants. The person who asked the question of the editor omitted, as I take it, to mention the size of beds; and I named a number of plants of various species as being suitable and of which an intelligent gardener could select one, two, or more, as seemed to him best for the purpose. There are positions in pleasure grounds and semi wild gardens where Roses, and even Scotch Roses, would not be incongruities in the vicinity of Azaleas &c. *F. M.*

Dangerous Insecticides. — After reading carefully all that Mr. W. H. Dobson has written (see page 85), about hydrocyanic acid gas, its troubles and grave dangers to both human and plant life, one is tempted to ask whether the game is worth the candle. Were some gardener encouraged to use this dangerous gas after reading Mr. Dobson's article, and to be poisoned in consequence, its doom as an insecticide would be sealed. But I rather infer that no one of good sense would be disposed to dabble with such an eminently dangerous article, and especially because it needs such exceeding care in its preparation and use. We have plenty of patent insecticides that are dangerous to neither man nor plant. With these, gardeners have been enabled to keep hot-house or greenhouse plants, Vine-Peaches and other fruits perfectly clean and free from insect pests, and what they have done they can do. That Mr. Dobson had need to employ drastic remedies in his plant houses is evident when he states that he had plenty of "material." That was his misfortune; where gardening is well done drastic remedies are not required. *A. D.*

Legislation and the Spread of Fungus Disease.—In my article on this subject I distinctly stated that in certain instances a fungus known to attack a given plant at home followed that plant when the latter was introduced to new countries, and followed it in such a manner as to elude detection by legislative methods. Mr. Salmon appears to have missed this point, and replies as if I denounced legislation entirely, and has consequently introduced controversy extending outside my delimited sphere. With this portion I shall not deal. There are, however, a few points bearing on my remarks which Mr. Salmon considers to be impossible or doubtful that may be briefly considered. We are told that Klebahn, an acknowledged authority on rusts, does not know how the Hollyhock rust reached Europe. Quite so; but I fail to see what this has to do with my statement that the rust did come: on this point, I suppose, we are all agreed, and if Klebahn does not know how it came, surely this is proof that it came in a manner that would have eluded legislation. Next Mr. Salmon points out that I have advocated a point that is impossible of realisation. Wheat taken to Australia could not have been inoculated by spores conveyed with it, as uredospores lose the power of germination so quickly. This contention is derived from ancient history, and only an assumption at best. Mycology is a progressive science, and if Mr. Salmon will turn up *Science*, Vol. 22, p. 50, he will learn much relating to the modern study of rusts; among other things, he will learn that the uredospores of many cereal rusts, including Puccinia graminis and P. rubigo-vera—both wheat rusts—remain quite uninjured and capable of producing infection, after being exposed on bits of dead leaves and straw to the drying winds of autumn and the intense cold of a North Dakota winter. This point, however, has no direct bearing on my statement that the rust fungus did reach Australia, and in a way that no practical act of legislation could have prevented. Other points challenged turn simply on a difference of opinion. I instanced a case of Broad Beans sent to Central Africa, where they were promptly destroyed by the same fungus that proves so destructive to Beans at home. I assumed that the fungus went along with the seed; Mr. Salmon assumed that the fungus was there already, and simply attacked the Beans. Either assumption may be correct. Mr Salmon is convinced that the Gooseberry fungus was introduced into Ireland; there is not a scrap of direct evidence on this point; it is a conviction. Now, suppose I adopt Mr. Salmon's line of reasoning with regard to the Bean fungus, and assume that the Gooseberry fungus was not introduced at all, but that it was already in Ireland; would Mr. Salmon even admit the bare possibility? I imagine not, neither would I; but is it more foolish to assume one case than the other, and, if so, why? It might be asked, Why did not the fungus attack the Gooseberry before? I don't know. I don't know why the Potato was with us so long before it was attacked. I am charged with scientific inaccuracy respecting the life-history of the Gooseberry fungus. I intentionally abstained from using scientific terms, but spoke of spores only as fully explaining my contention. I was fully conversant with the difference between spores, perithecia, etc., for some time past, in fact, for many years before I imparted to Mr. Salmon the information that the group of fungi including the Gooseberry mildew existed, and suggested that he should study the group. Fortunately, he acted on my advice, and the result has been an unqualified success. At the present moment we are in possession of much valuable information respecting these mildews, due entirely to Mr. Salmon's accurate and painstaking investigations. However, the mildews number only about 50 out of the 55,000 known species of fungi, and it may be that Mr. Salmon's knowledge of the remaining 54,950 species is not sufficiently exact to justify the position of the all-round censor he has assumed. Potato disease is stated to be absent from New South Wales, and, as an instance of prompt legislation, it is pointed out that measures are in force for preventing the introduction of Potatos from countries where the disease exists. If the New South Wales people in reality have no Potato disease I should strongly advise them not to import from anywhere, but to remain content with what they have, unless Mr. Salmon can indicate a country where Potato disease does not exist, as I am afraid no one else can. I am not at all prejudiced against legislation; in fact, I should like to see it applied in the case of our wilfully neglected orchards and gardens that are centres of infection from which disease spreads in every direction. So far as this country is concerned, nursery stock and seed cleaned by machinery are practically free from disease. I am quite open to conviction, but must say that I am not convinced by Mr. Salmon's arguments, and still consider that a very large share of disease caused by fungi is conveyed from one country to another in ways that no legislation could meet. *Geo. Massee.*

Dressing Fruit Walls in Winter.—A few years ago my attention was attracted by the freedom from insect pests on the upper parts of Peach and other fruit-trees growing on a wall, the upper half of which had been pointed during the previous winter, while on the lower parts of the trees, against the unpointed portion of the wall, the leaves were badly infested with aphides and other insects. The effect was most marked, for while the fruit in the one case attained to a considerable degree of perfection, in the other it was very inferior. Since that time I have made a point of bestowing extra attention on the walls, in the matter of winter dressing, using preferably a solution of caustic soda and potash, applied with a knapsack spraying machine, which, by the way, is one of the most useful appliances for use in the garden, as by its use the mixture can be made to go very much farther than with an ordinary garden engine, and it can be forced into every nook and cranny of the wall, destroying any insects or eggs that may be harbouring therein, the work being got over very quickly. Where this is carried out thoroughly during the resting season, much less trouble will be experienced with insects generally during the season of growth. *R. W. Dean, Wainsford.*

SOCIETIES.

ROYAL HORTICULTURAL.

February 13.—On the occasion of the annual meeting of the Society, we have become used to witnessing large exhibitions and the attendance of numerous visitors, but on Tuesday last the display was fuller and better than ever. The fine hall was replete with gay flowers and well-grown plants; the Committees were unusually well attended, and there were numerous visitors from the body of Fellows.

Before the Orchid Committee an exhibit from Major Holford was of outstanding merit, and its effect was better than we have seen in any previous exhibit of Orchids staged in the hall. The collection of Dendrobiums from Jeremiah Colman, Esq., was comprehensive and of great excellence. The Orchid Committee recommended awards to novelties which included three First Class Certificates, twelve Awards of Merit, and one Botanical Certificate. Diploma Awards were also made for plants previously advertised, particulars of which are given below.

The Floral Committee recommended three Awards of Merit to novelties, and nineteen Medals for groups of plants and of cut flowers, including a Gold Medal for Carnations.

The Fruit and Vegetable Committee made no award to a novelty, and only four Medals for exhibits.

In the afternoon, at the annual general meeting, nearly one hundred new Fellows were added to the Society's list.

Floral Committee.

Present: W. Marshall, Esq., chairman, and Messrs. C. T. Druery, H. B. May, R. C. Notcutt, Geo. Nicholson, Jno. Green, G. Reuthe, C. J. Salter, Jas. Douglas, J. F. McLeod, Chas. Jeffries, W. Howe, Jno. Jennings, C. Blick, Chas. Dixon, W. Bain, W. P. Thomson, R. C. R. Nevill, A. R. Goodwin, C. E. Pearson, Chas. E. Shea, W. Cuthbertson, E. H. Jenkins, W. J. James, F. Page Roberts (Rev.), Geo. Paul, H. J. Cutbush, R. W. Wallace, R. Hooper Pearson, and James Hudson.

Messrs. H. Cannell & Sons, Swanley, Kent, made a very fine display with Chinese Primulas, most of the plants being at their best stage of development. The flowers of this strain are of unusually large size and of great substance, with brilliant colours. Cannell's Blush Pink, Carmine, White, Swanley Giant, and others were prominent varieties. In addition to the strain already noticed, there were many varieties of the "star" type, in which the lax and free-blooming habit, combined with rich colours, were greatly admired. (Silver Gilt Banksian Medal.)

Messrs. Sutton & Sons, Reading, exhibited a collection of Primula sinensis that furnished the whole of one long table. The plants were arranged in rows running from the back to the front, there being five plants in each row, and in all over fifty varieties were represented. These plants were as nearly alike in size and habit as possible, and they presented a level surface of floral colour which varied a little in each row. It is obvious we cannot enumerate such a number of varieties, but it may be pointed out that the influence of "The Duchess" Primula, which Messrs. Sutton first brought to our notice a few years ago, is becoming more and more evident in the varieties that constitute the major portion of the strain. There is just one plant of a Giant Duchess, the flowers being nearly two inches across, and having all the colour and "halo" that characterised the first plant. Its appearance was remarkable, and there is little doubt but others of the same excellence will be forthcoming. The "double" Duchess is now two years old at least, and the "fern-leaved" Duchess is becoming equally well known. The semi-double varieties were grouped by themselves, and represented flowers of salmon, Carnation-flaked, pink, scarlet, and blue colours, as well as pure white flowers. The "Star" Primulas were also shown, and among these there are now double-flowered varieties. In addition to the Primulas Messrs. Sutton & Sons exhibited a group of Cyclamen of the variety Sutton's Cerise. The numerous plants had prominently marbled or mottled foliage, and every one was true as possible. In this variety a very successful effort has been made to develop to its fullest the silver or white markings on the foliage, which in some Cyclamens are much less prominent than was formerly the case. (Silver Gilt Banksian Medal.)

From Lady Tate, Park Hill, Streatham Common (gr. Mr. W. Howe), came a group of forced bulbs. Mr. Howe had probably rather less space than he required for the plants, for they were somewhat thickly placed, but they constituted a capital evidence of good management, the flowers being of very large size and perfect development. There were Tulips, Prince of Austria, Queen of the Netherlands, Pink Beauty, Van der Neer, Duchess de Parma, &c., Narcissus, Golden Spur, Henry Irving, Princess, Van Sion, &c., Italian pink-flowered Hyacinths, &c., &c. (Silver Gilt Banksian Medal.)

Messrs. W. & J. Brown, Stamford and Peterborough, exhibited plants of Eupatorium petiolare in flower [see fig. in *Gardeners' Chronicle, March 12, 1904*], also cut flowers of a strain of zonal Pelargoniums that has been described as a "Cactus" strain.

Messrs. Wm. Paul & Sons, Waltham Cross, Herts., exhibited a collection of Camellias in 40 varieties. Many plants were included in the display, some being specimens of a large size; all were flowering freely, and all looked the picture of health. Many seedlings, chiefly single-flowering varieties, found a place in the group—Mercury and conspicua tricolor, the latter, having red-striped flowers on a rose ground, being conspicuous. Another good flower is Pride of Waltham. This is a double form, the well-shaped flowers being of a lovely shade of rose pink colour. (Silver Gilt Flora Medal.)

Messrs. R. & G. Cuthbert, Southgate, Middlesex, put up a magnificent group of forced flowering shrubs. The plants were shown in splendid condition, and displayed in a manner that excited admiration. The design was made up of three bays, the intervening groundwork being composed of Azaleas. The central and taller bay was furnished with grand specimens of Magnolia speciosa and M. alba superba, set off by the bright foliage of Abutilon Thomsoni, while on either side were clumps of Lilac and the yellow Rhododendron (Azalea) Anthony Koster respectively. Standard trained plants of Wistaria, Laburnum, Prunus triloba, &c., were interspersed throughout the group, which was finished by an edging of Spiræa Thunbergi and small Ferns. (Silver Gilt Flora Medal.)

Messrs. B. S. Williams & Son, Upper Holloway, London, N., showed a collection of forced flowering plants: Lilacs, Azaleas, Staphylea colchica, Viburnum Opulus, Prunus triloba, Spiræas, &c.

Mr. L. R. Russell, Richmond Nurseries, Richmond, displayed a group of forced flowering shrubs: Lilacs, Azaleas, Viburnum Opulus Forsythia suspensa, Deutzia, &c. (Bronze Flora Medal.)

Messrs. Paul & Son, Cheshunt, staged a dozen varieties of Lilacs and a new hybrid Tea Rose named Cherry Ripe.

Messrs. Jas. Veitch & Son, Ltd., King's Road, Chelsea, showed Clianthus puniceus albus, Coleus shirensis, C. thyrsoideus, Eupatorium vernale, and Rhododendron (Azalea) Early Gem. (Bronze Flora Medal.)

Messrs. Wm. Bull & Sons, King's Road, Chelsea, exhibited a collection of Aralias. The species included the strong growing A. triloba, the elegant A. Veitchi, with its handsome pedate leaves, A. elegantissima, and A. Chabrieri [Elaeodendron], with simple, linear leaves.

Mr. W. Palmer, Andover Nurseries, Andover, had a number of Primulas in 60-size pots, adaptable for table decoration. The variety was Queen Alexandra, a double form with blush rose petals.

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, staged a miscellaneous group of plants, including Ferns, Camellias flowering well in small pots, Thyrsacanthus rutilans, with its long pendulous racemes of red tubular flowers plentifully developed, Primula × kewensis, and a batch of the scented leaved Pelargonium Clorinda, which formed the subject of our supplementary illustration in our issue for April 15th, 1905. (Bronze Flora Medal.)

Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, exhibited a group of large specimen Ferns. The exhibit was staged in the East Annexe, one end of which it completely filled. Splendid specimens were shown of Dicksonia squarrosa, Davallia fijiensis elegans, Aspidium nidus avis, Polypodium glaucum giganteum (magnificent specimen), Asplenium inequale, &c. (Silver Flora Medal.)

Messrs. John Waterer & Sons, Ltd., Bagshot, Surrey, set up a group of Evergreens, principally Hollies, among which was the small-leaved Ilex crenata. Several other good things were included, Osmanthus myrtifolius, Andromeda japonica, &c.

Mr. H. Hayward, Fife Road, Kingston-on-Thames, showed sprays of ornamental foliage: Conifers, Cassinia fulvida, and other shrubs, and two large bowls containing Garrya elliptica, with its long pendulous catkins well developed.

Mr. John R. Box, West Wickham, put up a batch of Begonia Gloire de Sceaux and a few of the Rex type interspersed with others of the semperflorens class.

Messrs. Barr & Sons, 11, 12, 13, King Street, Covent Garden, London, W.C., showed many choice Alpine and hardy flowers—Irises, Daffodils, Adonis amurensis, Lachenalias in several species, including L. Wrightii, with erect greenish-white flowers tipped with deeper green, Eranthis cilicica, Saxiifragas, &c.

Messrs. R. Wallace & Co., Kilnfield Nurseries, Colchester, staged a number of hardy and rock-garden plants in flower, prominent among which was a batch of Saxifraga burseriana major, and three splendid specimens of Lachenalia Nelsoni.

The Misses Hopkins, Mere, Knutsford, Cheshire, showed a small group of Alpines. We noticed a specimen of Daphne Blagayana in flower.

Messrs. Thos. Ware, Ltd., Feltham, Middlesex, set up a number of pans and boxes of hardy and Alpine plants, among others Tropæolum tricolor, Canarina campanula, and Orobus vernus purpureus. Some good Carnations were also staged by this firm. (Silver Flora Medal.)

Messrs. John Peed & Son, West Norwood, also presented a display of Alpines: Hepaticas, Primroses, Lachenalias, Hellebores, &c.

Mr. G. Reuthe, Keston, Kent, showed hardy and rock-garden plants in flower: Irises, including I. Bakeriana, Galanthus Ikariæ, Hepaticas, many species of Crocus, &c. (Bronze Flora Medal.)

Sir E. G. Loder, Bart., Leonardslee, Sussex (gr. Mr. W. A. Cook), displayed a number of flowers from the open that testified to the mildness of the past winter: Azara microphylla, A. Catesbei (with handsome foliage), and A. integrifolia.

Lady Chesterfield, Holme Lacy, Hereford (gr. Mr. W. Humphries), showed several varieties of Violets, all exhibiting good culture.

Mr. Robt. Sydenham, Tenby Street, Birmingham, brought bowls of Narcissus grown in moss fibre. The plants were flourishing in this material.

The Guildford Hardy Plant Co., Millmead, Guildford, exhibited a small group of Alpine plants in pots and pans. Cyclamen coum was very bright in several pans, also Anemone blanda, Iris reticulata, &c.; but other species, though good specimens, were not in flower.

Carnations.

The effort to make a special show of these flowers met with success. The groups were arranged in various parts of the hall, and each was more or less a replica of another, owing to the similar style of staging adopted, and to the repetition in each stand of similar varieties. The largest display was shown by Mr. G. Engelmann, Horneybrook Nurseries, Saffron Walden, Essex. This collection made a brilliant show, and all the flowers were in first-class condition, and embraced a very large number of the finest sorts in cultivation, such as Flamingo (scarlet), Mrs. T. Lawson (and its white variety), The Belle (white), Enchantress, Fiancée (salmon pink), Prosperity, The Cardinal (scarlet), Lady Bountiful, &c. (Gold Medal.)

Messrs. Cutbush & Sons, Highgate, London, N., set up a very pretty group of Carnations. The flowers, which were principally of the American or free-flowering type, showed to advantage against a groundwork of green baize, fancy vases and bamboo epergnes being requisitioned for their display, which was further enhanced by sprays of Asparagus medeoloides (Smilax) entwined around the receptacles. The varieties embraced most of the popular kinds. We also noticed some excellent blooms of Souvenir de la Malmaison, Princess of Wales, and Duchess of Westminster. On an adjacent table Messrs. Cutbush arranged an exhibit of hardy early-flowering plants. Two interesting plants were Corydalis rutæfolius and Dondia epipactis. (Silver Gilt Banksian Medal.)

Mr. A. F. Dutton, Iver, Bucks, displayed an attractive exhibit of Carnations having excellent flowers of many of the latest and most beautiful of the American or tree-flowering type. Christmas Eve is a comparatively new scarlet variety of good shape. The fine dark clove-coloured Harlowarden was shown well. (Silver Gilt Flora Medal.)

Mr. Hayward Matthias, Medstead, Hants, arranged a small exhibit of these flowers, having The Belle (white), Nelson Fisher, Harlowarden, &c. (Bronze Banksian Medal.)

Mr. S. Mortimer, Rowledge, Farnham, Surrey, contributed an excellent group of these flowers, having well-grown specimens neatly arranged with small Palms, Ferns, and Smilax. The brightness of the exhibit was remarked, and the selection of varieties of the best. We noticed a flaked variety named Mrs. H. A. Patten, the ground colour being white and the marking of bright red colour. (Silver Flora Medal.)

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, showed many vases of Carnations, and they had in addition a number of Cyclamen plants with flowers of white, red, salmon and other shades of colours. (Silver Banksian Medal.)

Mr. H. Burnett, St. Margaret's Vineries, Guernsey, displayed a collection of Carnations, including two new varieties, Mrs. H. Burnett (see Awards) and Mikado, the latter being a flower of pleasing form, but the mauve colour is dull. A vase of Mrs. Lawson and another of unnamed seedlings were also noticed. (Silver Flora Medal.)

Messrs. Dodd & Lancashire, Guernsey, staged half-a-dozen vases of these flowers, but although the collection was small, the quality was excellent. The varieties were Mrs. T. W. Lawson, The President (dark clove colour), Enchantress, &c. (Silver Banksian Medal.)

Messrs. T. S. Ware, Ltd., Ware's Nurseries, Feltham, also displayed some excellent Carnations, as already stated above.

Awards of Merit.

Asparagus Colmanni.—This is a variety of Asparagus exhibited by Jeremiah Colman, Esq., Gatton Park, Reigate (gardener, Mr. W. P. Bound). It forms a dwarf bushy plant hardly one foot in height, and throws a number of growths from the base. The growths are similar to those of A. Sprengeri, but more delicate and slender in appearance.

Lachenalia "Brightness."—This is one of the fine crossbred varieties raised by Mr. Moore, Glasnevin Botanic Gardens, Ireland. The flowers are of considerable size, and coloured deep yellow with crimson margins, but the Award of Merit was recommended mainly on the ground that this variety is an extra good grower, and has an excellent habit. Shown by Mr. F. W. Moore.

Carnation Mrs. H. Burnett.—This winter-flowering or "tree" Carnation is of excellent quality, and very attractive. The flowers are of considerable size, and have petals only very slightly fringed, of rosy salmon colour, with somewhat slender stems. Shown by Mr. H. Burnett, Guernsey.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (Hon. Sec.), Major G. L. Holford, Harry J. Veitch, Francis Wellesley, F. Menteith Ogilvie, R. Brooman-White, H. Little, W. Boxall, H. A. Tracy, H. G. Alexander, Arthur Dye, F. J. Thorne, H. Ballantine, W. H. White, S Briggs-Bury, J. Charlesworth, A. A. McBean, R. G. Thwaites, H. G. Morris, H. T. Pitt, F. Sander, W. Cobb, E. Ashworth, G. F. Moore, W. A. Bilney, J. Colman, and De B. Crawshay.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, had an exhibit which was generally conceded to be the most extensive, varied, and beautiful, as well as the best arranged group which has yet appeared in the new hall, and it was deservedly awarded the Society's Gold Medal, with the addition of the Lindley Medal to Mr. H. G. Alexander, the Orchid grower at Westonbirt, as a mark of appreciation of the excellent culture he had exercised on the plants of all classes. It is impossible to enumerate the scores of rare Orchids shown, and a general description of the arrangement must suffice. The group occupied the first section of the main staging at the entrance of the hall. At the back were massive Kentias and dwarfer Cocos Weddelliana, two noble specimens of the last-named species being also placed in the group, the centre of which was composed of a fine lot of white Lælia anceps with fine pans of scarlet Sophronitis arranged in front of their gracefully arching spikes. On each side of the central block of white Lælia anceps were groups of rare Cypripediums which were continued by elegant arrangements of white and coloured Odontoglossums, the white O. crispum being specially beautiful. Then followed, on each side, selections of good Cypripediums flanked by richly coloured Cattleya Trianæ, C. Percivaliana, &c., the ends being of orange and crimson coloured hybrids of Lælia cinnabarina, Lælio-Cattleya × luminosa, rose-coloured Pinguicula caudata, Masdevallias, some fine pans of white Cœlogyne cristata being interspersed along the front line, the whole admirably set up in fresh green Moss and Maidenhair Fern. Among the Cypripediums noted was a fine selection of C. aureum varieties, the noble C. Scipio, raised at Westonbirt, C. Maudiæ, &c.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound) secured the Gold Medal for a very beautiful and varied group of Dendrobiums, many of them raised at Gatton Park, the whole occupying nearly 700 square feet. Thirteen distinct varieties of D. nobile were present, the pure white D. n. album contributing 165 flowers. There were also several plants of the handsome D. n. Colmanianum, a pretty white flower with lilac disc to the lip, and the rare D. tortile album. With these were about 70 distinct Dendrobiums of the type for which Gatton Park is noted, including varieties of D. Artemis, D. Cybele, D. rubens, D. Othello, &c. D. × rubens, Gatton Park variety, was a noble and richly-coloured flower; so also D. rubens Colmani, of a bright reddish purple. D. Othello colossus was large, finely formed, and with rich, claret-coloured disc to the lip; D. Ainsworthii Colmani, a beautiful and dark-tinted bloom, and all the others grown to surpass even their fine form of last year. Others noted were a very fine D. Wardianum album, white with orange disc, and no dark marking as usually seen; D. crassinode album, D. melanodiscus Aurora, D. Schneiderianum, &c. Arranged with the Dendrobiums were some nice hybrid Calanthes and Phaius, white Lælia anceps, the orange-coloured Epidendrum Boundii, varieties of Spathoglottis Aureo-Veillardii, the rare Arachnanthe Cathcartii, Masdevallias, Cymbidium Hookerianum punctatissimum, Cattleya Trianæ alba, C. T. Purple King, Lælia Mary Colman, &c. The whole was most tastefully arranged by Mr. Bound.

J, Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), was awarded a Silver Gilt Flora Medal for an excellent group composed chiefly of fine varieties of Lycaste Skinneri, Cattleya Trianæ and Odontoglossum crispum, in all of which Mr. Bradshaw excels. The best of the Lycastes were L. Skinneri alba, 20 flowers of which appeared; L. S. Jewel, with large rose-tinted flowers; L. S. Enchantress, blush white and fine in shape; L. S. Eros, L. S. Apple Blossom, L. S. Beauty, and other fine varieties were equally good, and the hybrid L. Balliana bore many rich claret-rose blooms. The varieties of Cattleya Trianæ, the best of which were shown for Diplomas, ranged from white to the best coloured forms.

Messrs. James Cypher & Sons, Cheltenham, secured a Silver Gilt Flora Medal for a fine, varied, and excellently arranged group in which the white forms of Lælia anceps and good hybrid Cypripediums were conspicuous. Cypripedium aureum Hyeanum is a grand flower, and it has never been seen in so good a condition as in Mr. Cypher's group. C. aureum virginale, and other varieties of C. aureum; C. Leeanum and C. insigne varieties and many others were also well shown. Varieties of Lycaste Skinneri, Cattleya Trianæi, Dendrobiums, Phalænopsis, Odontoglossums, including the rare O. aspidorhinum, a pretty Phaio-Calanthe, scarlet Ada aurantiaca, Sophronitis grandiflora, and various Masdevallias were also noted.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), received a Silver Flora Medal for a fine group of Cypripediums, a large proportion of them being hybrids of C. villosum and C. Boxalli, and entering into the Diploma competition of the day, the whole being a most remarkable series too varied and excellent to admit of adequate enumeration in the space at our disposal.

Messrs. Sander & Sons, St. Albans, were awarded a Silver Flora Medal for an interesting group of good things, the best of which, Cymbidium Holfordianum, secured a First Class Certificate. (See Awards.) Cypripedium Pallas (Godefroyæ × Hookeræ) was a very distinct purplish red spotted flower; C. Leeanum Niobe, showy and distinct; C. × Rajah (triumphans × callosum), a good, dark flower; Odontoglossum Loochristyense nobilius, yellow prettily spotted. Among good Cattleyas C. Trianæ Purple King merited the name; of species Platyclinis valida had a profusion of white fragrant sprays; Eulophia Saundersiana represented a rare and pretty species.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), was awarded a Silver Banksian Medal for a pretty little group of finely-flowered yellow hybrid Dendrobiums, including two fine D. Wiganiæ xanthocheilum, and two of the better known Burford hybrid D. Melpomene; also D. Ophir, D. xanthocentrum, D. Aspasia, and the finely coloured Cypripedium Watsonianum.

Messrs. J. and A. A. McBean, Cooksbridge, received a Silver Banksian Medal for a neat group of white Lælia anceps varieties, good Odontoglossums, etc., arranged with the pretty reddish scarlet Epiphronitis Veitchii, etc. Odontoglossum crispum Anak was a noble white flower.

Messrs. Hugh Low and Co., Enfield, were awarded a Silver Banksian Medal for a group composed of Miltonia Bleuana, varieties of Cattleya Trianæ, of which The Don was a very large self rose coloured flower with orange coloured disc; Dendrobium heterocarpum, D. superbiens, with three spikes; D. crassinode, a nearly white Vanda Amesiana, and various Cypripediums, of which C. chrysotoxum, a large yellowish flower with white to the dorsal sepal, was the best.

M. Chas. Vuylsteke, Ghent, secured a Silver Banksian Medal for a group of hybrid Odontoglossums: O. ardentissimum, O. Wiganianum, and others.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent Cattleya Miranda, three good forms of C. Trianæ, Cypripedium aureum Surprise, C. a. Hyeanum, C. a. virginale, and C. Mrs. Wm. Mostyn, the last two securing Diplomas.

Mr. Whateley, Kenilworth, showed several pretty Odontoglossums.

H. Druce, Esq., The Beeches, Circus Road, St. John's Wood (gr. Mr. Walker), staged a small group of Cypripedium villosum and hybrids.

Messrs. Heath & Sons, Cheltenham, showed a small lot of Cypripediums, Dendrobiums, &c.

Messrs. Jas. Veitch & Sons, Chelsea, showed two Sophro-Lælia Psyche, two Sophro-Cattleya Saxa, and Sophro-Lælia Valda—all of pretty tints of yellow and red.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium Miss Marian Sillem, a pretty white flower densely spotted with purple; a very fine form of C. Mons de Curte, C. W. E. Dickson, C. Boxalli nigricans (see Awards), and Cattleya Chocoensis, Westfield variety, fine in form, white with orange disc and small purple spot on the lip.

Mr. A. A. Peeters, Brussels, showed three forms of his fine hybrid Odontoglossum Lambeauianum, illustrated in the *Gardeners' Chronicle* (see Awards).

W. Parmenter, Esq., Braintree (gr. Mr. Buckland), showed a nearly white form of Lælia Jongheana.

C. L. N. Ingram, Esq., Elstead (gr. Mr. T. W. Bond), sent Lælia canariensis (harpophylla × anceps) and Cattleya rubens.

W. M. Appleton, Esq., Weston-super-Mare, sent several hybrid Cypripediums.

R. I. Measures, Esq., Camberwell (gr. Mr. Smith), showed an interesting collection of cut Cypripediums.

R. G. Thwaites, Esq., Streatham (gr. Mr.

Black), showed two varieties of Lælio-Cattleya Oriens (L. Cowanii × C. Trianæi).

H. T. Pitt, Esq. (gr. Mr. Thurgood), sent Lælia anceps Schroderiana and Cypripedium Ajax.

Messrs. Charlesworth & Co., Bradford, showed Lælio - Cattleya harpo - aurea, Odontoglossum Adriano triumphans and O. Hallio Adrianæ.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed Lælio-Cattleya Myra imperialis, very fine in colour; Lycaste Skinneri Fascinator, Cypripedium aureum Surprise, and C. insigne Bohnhoffianum.

C. K. Wild, Esq., New Eltham (gr. Mr. Usher), sent a good Cattleya amethystoglossa.

From the Royal Botanical Gardens, Dublin, came a spike of a fine variety of Odontoglossum cirrosum, Oncidium pubes, and Gongora atropurpurea.

Messrs. Sutton & Sons, Reading, showed a pan of a pretty terrestrial Orchid from China, reported to be allied to Pleione pogonioides. It was awarded a Botanical Certificate by the Scientific Committee.

AWARDS.

First Class Certificate.

Cymbidium Lowio-grandiflorum, from Major G. L. Holford (gr. Mr. H. G. Alexander). It is the plant raised by Messrs. Jas. Veitch and Sons, and who formerly received an Award of Merit for it. Flowers large as those of C. grandiflorum, sepals and petals emerald green, lip creamy white with reddish spots.

Cymbidium Holfordianum (eburneum × grandiflorum), from Messrs. Sander & Sons. A charming and delicately tinted hybrid with flowers partaking much of C. eburneum, but large as C. grandiflorum. Present inflorescence four-flowered, sepals and petals ivory-white, slightly tinged with emerald green. Lip, cream-white with a row of purple spots inside the margin and at the base.

Odontoglossum Lambeauianum, from Mr. A. A. Peeters, Brussels, two of whose varieties of this noble hybrid have been illustrated in the *Gardeners' Chronicle*. Flowers large, much like one of the best spotted O. crispum, but of firmer substance (see illustrations in *Gardeners' Chronicle*, Nov. 4 and Dec. 23, 1905).

Award of Merit.

Lælio-Cattleya Myra, Burford variety (Trianæ × flava), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). The finest of its class. Flowers bright yellow with dark crimson lip.

Dendrobium Brodiei (Dominianum × Wiganiæ), from Jeremiah Colman, Esq. (gr. Mr. Bound). Flowers white shaded with rose, disc light purple.

Spathoglottis Colmani (aureo-Veillardi × aurea, Gatton var.). A very pretty yellow flower spotted with crimson. Shown by J. Colman, Esq.

Dendrobium Othello Colossus, from Jeremiah Colman, Esq. Like a very broad-petalled rubens, and with a large maroon disc to the lip.

Cypripedium Boxalli nigricans, from Francis Wellesley, Esq. (gr. Mr. Hopkins). The darkest form of C. Boxalli. Dorsal sepal blackish purple with narrow light margin. The rest of the flower very dark.

Cattleya Trianæ, Westonbirt variety, from Major G. L. Holford. A charming form of typical richly-coloured C. Trianæ.

Lycaste Skinneri Fascinator, from F. Menteith Ogilvie, Esq. (gr. Mr. Balmforth). One of the finest of the delicately-tinted white and rose forms which has yet appeared.

Lycaste costata, from H. G. Goodson, Esq. Putney (gr. Mr. Day). The fine old species with ivory-white flowers was well shown.

Cymbidium eburneo - giganteum, from Messrs. Charlesworth & Co. Flowers large, cream-white with reddish brown markings.

Cypripedium × *G. F. Moore, variety punctatissimum*, from G. F. Moore, Esq. A fine flower with dorsal sepal densely spotted with blackish-purple.

Cypripedium Edithæ Rowena (Chamberlainiana × bellatulum), from W. M. Appleton, Esq. Flowers densely spotted with dark purple.

Lælia anceps Fascinator, from Messrs. J. & A. A. McBean. A grand flower, resembling the fine L. a. Chamberlainiana, but with a purplish feather on the segments.

Botanical Certificate.

Maxillaria arachnites, from Sir Trevor Lawrence, Bart. A fine plant with many pretty light yellow flowers.

Diploma Awards.

Cattleya Trianæ.—*1st Diploma:* Cattleya Trianæ "The Premier," from J. Bradshaw, Esq. *2nd Diploma:* C. T. Westonbirt var., from Major G. L. Holford.

Lælia anceps (white).—*1st Diploma:* L. anceps Schroderiana, from Baron Schroder, Major Holford, and Jeremiah Colman, Esq. *2nd Diploma:* L. a. Hollidayana, from De B. Crawshay, Esq.

Cypripediums (Species).—*1st Diploma:* C. Boxalli nigricans, from Francis Wellesley, Esq.

Cypripediums (Hybrids).—*1st Diploma:* Cypripedium aureum virginale, from J. Gurney Fowler, Esq., and G. F. Moore, Esq. *2nd Diploma:* Cypripedium Mrs. Wm. Mostyn, from G. F. Moore, Esq., and J. Gurney Fowler, Esq.

A large collection of the Society's paintings of certificated Orchids bearing on the Diploma exhibits was arranged, and proved very useful and instructive.

Fruit and Vegetable Committee.

Present: A. H. Pearson (in the chair), and Messrs. Jos. Cheal, James Gibson, W. Bates, Geo. Woodward, S. Mortimer, A. Dean, H. Parr, W. Fyfe, Ed. Beckett, W. Pope, R. Lye, H. J. Wright, Jas. Vert, Geo. Kelf, W. Barnes, Jos. Davis, J. Lyne, Chas. Foster, P. C. M. Veitch, J. Willard, J. Jaques, J. McIndoe, Owen Thomas, and W. Poupart.

Six good bunches of Black Alicante Grapes in an excellent state of preservation were shown by G. C. Raphael, Esq., Castle Hill, Englefield Green (gr. Mr. H. Brown). (Silver Banksian Medal.)

The small table in the Annexe contained several dishes of Apples, and two Broccoli, named respectively Snow's White and Brydon's Peerless, were shown for award, but were passed by the Committee.

Mrs. MacCreagh, Thornhill, Stanton-in-Peak, Bakewell, Derby, showed six dishes of Oranges and two of Lemons. The Oranges were well coloured, and ornamental, but appeared hollow and of little value for dessert. (Silver Banksian Medal.)

Messrs. Sutton & Sons, Reading put up a magnificent stand of Potatos. The collection numbered 150 dishes, besides many species and types. Among the ordinary varieties were the very latest and best, and shown in first-class condition. More interesting than the culinary varieties were the numerous species and types, as showing from what apparently insignificant origins the fine tubers exhibited on either side of them have been obtained. The tubers of Solanum tuberosum were about the size of small marbles; those of S. Maglia were of the size and shape of cob-nuts; the skin being almost black; the tuber S. Commersoni was much larger, and the skin was very pale. S. polyadenium resembled Pea-nuts in shape, and were not much larger than these fruits. Then there were the different varieties of the type known as Fir Apples, the small white Fir Apple somewhat resembling a Fir Cone. Blue Giant was staged in juxtaposition to the large variety said to have originated from S. Commersoni, and the resemblance was seen to be very great. We have no space to name the interesting commercial varieties with which the exhibit abounded. (Gold Medal.)

Mrs. Denison, Little Gaddesden, Berkhampstead (gr. Mr. A. G. Gentle), staged about 30 dishes of Potatos in 17 varieties. They formed a remarkably even, clean lot of tubers, and embraced several of the latest novelties. (Silver Knightian Medal.)

The Annual Meeting

was held in the lecture-room upstairs, under the chairmanship of Sir Trevor Lawrence, President. Nearly one hundred new Fellows were elected at the commencement of the proceedings.

Sir Trevor Lawrence moved the adoption of the annual report and balance-sheet, and the motion having been seconded by Mr. Gurney Fowler, remarks on the subject of the report were made by Mr. H. J. Elwes and Surgeon-Major Ince, after which the report was adopted unanimously and with acclamation.

The President, Treasurer and Secretary were re-elected. Major Holford, C.I.E., C.V.O., and Mr. Henry B. May were re-elected members of Council, and Lord Balfour of Burleigh and the Earl of Tankerville were elected new members of Council. The Rt. Hon. J. Chamberlain, M.P., Earl of Ducie, Lord Rothschild, Baron Schröeder, Sir J. T. Dillwyn-Llewelyn, Bt., and Sir Frederick Wigan, Bt., were elected vice-presidents of the Society. Mr. Alfred C. Harper was appointed auditor. Remarks on this meeting will be found on page 104.

ROYAL GARDENERS' ORPHAN FUND.

Annual Meeting.

The annual meeting of the subscribers to this deserving institution was held at Simpson's Restaurant, Strand, London, on February 9, Mr. H. B. May presiding. About thirty supporters comprised the company, but the smallness of the assembly may be taken rather as an indication of the confidence reposed in the management than to lack of interest. The report of the Executive Committee was presented to the meeting, and was as follows:—

Report of Executive Committee.

"The Committee, in presenting their eighteenth annual report, congratulates the subscribers once more upon the continued steady progress which the Fund is making, though the annual income is still far from sufficient to meet the many claims now made upon the charity. The revenue for the year (exclusive of legacies, &c.), shows an increase of £186 16s. over the receipts for 1904; while having regard to the special objects for which the Fund was established, the expenditure in weekly allowances and grants in aid of the sum of £1,438 15s., an increase of £108 15s. over the previous year's total, the Committee believes will be accepted as an assurance that they are administering the means at their disposal with a due regard to the beneficent policy of doing the greatest good to the greatest number. That the number of claims for assistance has considerably outgrown the Committee's resources, may be seen by a reference to the list of candidates seeking election and the relatively small number of ten only which the Committee feel justified in recommending the subscribers to elect. That the Committee would be glad to see the position reversed is obvious to all, and reversed it could be easily enough if only the great body of gardeners in the country would afford the support which such an institution surely deserves. With such a small subscription as 5s. per annum, there are hundreds of gardeners who could, if they would, render solid aid, and the Committee again most earnestly appeals to the better nature of the many who have hitherto neglected their obvious duty.

"The number of orphans who have been elected to receive the benefits of the Fund during the 17 years of its existence is 204, and the total amount expended in allowances during the same period is £14,961 12s. 6d. At the commencement of the year, 88 children were receiving the full weekly allowance, and 15 were added to the list at the annual meeting. On December 31 the number on the Fund was 90, and 23 of the candidates waiting for election were receiving grants in aid.

"The question raised at the last annual meeting as to the advisability of permitting two members of one family to seek election at the same time, has been well considered by the Committee, and they have come to the conclusion that, having accepted the nominations of the children whose names appear on the voting list, they had no option but to allow them to appeal for election; but that, until further notice, the nomination of only one child at a time from any family will be accepted unless in very exceptional cases, when the dire necessities of a family may properly justify the acceptance of two.

"The Committee records the fact with much gratification that, under the genial presidency of the Earl of Mansfield, the annual festival held on May 11 proved from every point of view an unqualified success, the entire proceedings giving the liveliest satisfaction to all present. Lord Mansfield's kindly appeal for the support of all interested in the welfare of the Fund met with a most generous response, the subscription list amounting to the handsome sum of £889 4s. 8d., which amount has only once been exceeded at any previous annual dinner. The Committee most heartily thanks Lord Mansfield for his great kindness on that occasion, and invites the subscribers to join them in unanimously adding his Lordship's name to the roll of Vice-Presidents.

"The next annual festival has been arranged to take place at the Hotel Cecil on Thursday, May 10, when the esteemed treasurer of the Royal Horticultural Society, J. Gurney Fowler, Esq., has most kindly consented to preside. Mr. Gurney Fowler's keen personal interest in gardening and influential position in the horticultural world will, the Committee feels assured, insure for him a most cordial reception as well as a very generous measure of support on that occasion.

"The supporters of the Fund will learn with as deep regret, as the Committee feels in making the announcement, that, in consequence of ill-health, Mr. Sherwood has felt compelled to resign the office of Treasurer, which he had held for nine years. Than Mr. Sherwood the Fund has had no more generous supporter. From the first inception of the movement which led to its establishment none has more whole-heartedly watched over its interests, and his munificent benefactions and ready counsel and advice in promoting its best interests will cause his name to be remembered with sincere gratitude and affection. The Committee congratulates the subscribers on the acceptance of the office, at their unanimous request, by Mr. Edward Sherwood, in succession to his father.

"With due regret the Committee records the loss which the Fund has sustained by deaths of valued supporters, including two of the Vice-Presidents, Sir Reginald Hanson, Bart., who presided at the annual dinner in 1889, and Mr. Richard Dean, one of the founders of the Fund and for some years an active member of the Committee. From the late Mr. David P. Laird the Fund received constant support from its foundation. He was ever most energetic in bringing its claims under the notice of his Scottish friends, and by his death the orphan children of Scottish gardeners have lost one of their best friends.

"The Committee have with sincere regret been called to accept the resignation of their valued colleague Mr. George Cuthbert, in consequence of his severe accident. In recognition of the warm interest taken in the Fund by Mr. Cuthbert and his family his son, Mr. George H. Cuthbert, has been unanimously elected to the vacant seat. The members of the Committee who retire by rotation are Mr. H. B. May, Mr. W. Bates, J.P., Mr. G. Caselton, Mr. H. J. Jones, Mr. J. W. Moorman, Mr. W. Nutting, Mr. G. Reynolds, and Mr. J. H. Witty; and Messrs. May, Bates, Caselton, Moorman, Nutting, Reynolds and Witty being eligible, offer themselves for re-election. For the seat vacated by Mr. Jones, who retires, the Committee recommend the election of Mr. Charles Dixon, Holland House Gardens, Kensington, W.

"The Committee again desire most cordially to record their appreciation of the valued services rendered by the auditors, Mr. M. Rowan and Mr. P. Rudolph Barr. Mr. Rowan is the retiring auditor and is nominated for re-election."

The balance-sheet showed that the total income from all sources was £3,037 0s. 4d., including a balance from the last account of £1,306 15s. 6d. The magnificent sum of £889 4s. 8d. was raised in connection with the annual dinner, which amount, less £149 19s. 9d., for expenses in connection therewith, formed by far the largest contribution to the fund yet made. Invested funds furnished £336 19s. 9d., while subscriptions and donations realised £551 14s. 5d. On the debit side of the balance-sheet the total expenditure, including investments, reached a sum of £2,339 19s. 6d., and a substantial balance of £697 0s. 10d. remains on hand. The total grants expended in allowances and relief amounted to £1,438 15s.

The Chairman, in the course of his remarks, expressed his pleasure at the increased income, all sources of which are augmented save that of legacies. Still he was not satisfied, and he appealed for more subscriptions, especially from the general body of gardeners. He instanced one large county in which four children were receiving allowances, and which had two candidates on the present voting paper, yet that county contributed last year only the small amount of £28. Another county sent but £24, and of this amount £15 came from one town, there being only two gardeners who had subscribed direct. The Committee have carefully considered the question of allowing two candidates from one family to be nominated for relief, and while they do not recommend that any alteration be made in the rules in order to render such applications impossible, because in some cases it might become an absolute necessity, still the Committee will not ordinarily accept after this date the nomination of a second candidate from one family until the first has been elected. The Chairman also referred to the success of the last annual festival, and congratulated the subscribers on securing Mr. Gurney Fowler to preside at the next similar function. The retirement of Mr. N. N. Sherwood from the present post of treasurer was deeply regretted, as no better friend of the fund than that gentleman existed, but they were happy in the fact that Mr. Sherwood's son had consented to take up the responsibilities his father had felt compelled to relinquish. The adoption of the report having been seconded by Mr. Bates in a few well-chosen words, Mr. Alex. Dean rose to support the motion. He advocated the co-operation of the numerous Gardeners' Mutual Improvement Societies throughout the country to swell the funds. At the Kingston Gardeners' Society, of which the speaker was a member, a collection was taken at every meeting, with the result that £4 had been forwarded to the secretary. This, in itself, was not a large amount, but if other bodies did likewise an appreciable sum would be realised.

The Election of Officers

was next proceeded with. The president and vice-presidents were all re-elected, and The Earl of Mansfield was unanimously elected a vice-president.

As above stated, Mr. Ed. Sherwood was installed in the office of treasurer, *vice* Mr. Sherwood, sen. The auditors were re-elected and thanked for their past services. All the retiring members of the committee were re-elected to serve, and the name of Mr. Chas. Dixon, gardener at Holland House, Kensington, substituted for that of Mr. H. J. Jones, who retired. Mr. Brian Wynn was re-appointed secretary.

Result of the Ballot.

The chairman announced the names of the successful candidates and the number of votes they received as follows:—

Name.	Votes.
1. Josephine Inglis	533
2. Edith Clare Harvey	439
3. Albert Leslie Day..	318
4. Arthur Reid	297
5. Doris Evelyn Stride	287
6. William Allan Seaman	284
7. Ena Mary Tilbury..	241
8. Harold Ingersoll Hayes	237
9. Thomas Arthur Hardes	213
10. Olive Gertrude Bundy	205

After the declaration of the poll the chairman said that it was a matter for regret that two children for whom third applications had been made were still unsuccessful, also that a third candidate, whose father had subscribed regularly to the funds for 17 years, had also been unsuccessful. If some one would move that these three children, Albert Edward Page, Arthur Richard Sparkes, and Edward Lee be added to the list by resolution, the committee would be glad to give the resolution its support. Mr. W. Marshall thereupon moved that the children be elected, and the motion was carried unanimously.

The Friendly Supper.

In the evening the members of committee and friends, to the number of 35, assembled at the friendly dinner at the same hotel. Mr. H. B. May presided, supported by Mr. Edward Sherwood and Mr. W. Marshall, and a pleasant evening was spent.

HORTICULTURAL CLUB.

Annual Meeting.

February 13.—The annual meeting of the members of the Horticultural Club took place on the above date in the club room at the Hotel Windsor, Westminster.

The Committee, in the annual report, announced that it had the pleasure to record an interesting year in the history of the club, and the reading of excellent papers after the monthly dinners. During the year seven members have resigned, all owing to the distance at which they reside from London. The number of members is now 127. The Committee deeply regrets to have to record the death of the founder of the club, who was also the first secretary—the Rev. Honywood D'Ombrain, whose interest in the club was maintained until the last. Mr. Harrison Weir had been an honorary member for many years, and by his death an interesting personality has gone from among us. The general meeting of the club was held on February 14 (1905), and was followed by the annual dinner under the presidency of Sir John Llewelyn, Bart., about eighty members and guests being present.

At six o'clock p.m. the members and friends assembled for the annual dinner. Sir John T. Dillwyn-Llewelyn, Bart., presided over a company which numbered rather more than seventy. Mr. George Paul proposed the toast of "The Royal Horticultural Society," and referred humorously to the "great surplus" the Treasurer of that Society had declared earlier in the afternoon to those who attended the annual meeting. In the presence of such profits he would suggest to the Council that whilst letting the Vincent Square Hall as profitably as possible to others than those engaged in horticultural work, that they should let it for next to nothing to the smaller horticultural societies who were less prosperous. There was no wonder that the annual meeting had been a satisfactory one, and it was certain that in the hands of the present Council the interests of the Royal Horticultural Society were safe. Mr. W. A. Bilney responded, and in the course of his speech said it was desirable that an institute for scientific research should be established at Wisley.

The toast of the evening, that of the "Horticultural Club," was proposed by the President, who made kindly and sympathetic reference to the decease of the Rev. H. H. D'Ombrain and Mr. Harrison Weir. Sir John Llewelyn was sure that the club served a very useful purpose, and was glad that it continued to succeed. Mr. George Monro responded, and stated, amidst laughter, that if the Royal Horticultural Society had been able to show a surplus on the year's working, so also had the club, for the auditors had declared a balance that day of 2s. 8½d.! The club was a social centre for horticulturists, the members were very fond of the institution, and it could not be denied that the papers read at the monthly meetings were of a very high order of merit. Many of them had been accepted for publication in the Royal Horticultural Society's "Journal." The club had 127 members, and a sum of between £400 and £500 invested at the bank.

Mr. Harry J. Veitch proposed the toast of "The Chairman" in very appropriate terms, and remarked upon the affection Sir John Llewelyn is known to entertain towards the club. He always attends a meeting when it is possible for him to do so, and arranges many of his visits to London in accordance with these meetings. Sir John has a delightful garden at Penllergaer, in South Wales, but it is distant from London about 200 miles. In response, the President said that the club had nothing to thank him for, but he had himself to acknowledge indebtedness to the club and to members of the club. He felt that it was a great privilege when coming to London to be able to meet horticultural friends in such a social manner as they did there.

The next toast was that of "The Visitors," proposed by Mr. W. J. Jefferies, and responded to by the Rev. C. J. Smith, B.A., Dr. Augustine Henry, and Mr. Rawlings. The toast of "The Secretary, Mr. Cook," proposed by the Chairman, and received with musical honours, concluded the list. A good programme of music was rendered by the "Quavers" Vocal Quartette, and the dinner tables were very prettily decorated with flowers by Messrs. James Veitch & Sons.

LEEDS PROFESSIONAL GARDENERS' BENEFIT.

The thirty-ninth annual report and statement of accounts of the above society expresses great satisfaction at the continued improvement in the financial position of the institution.

The amount of sickness experienced among the members during the year has been particularly small, entailing an expenditure of £33 14s. 2d. only, or just over 5s. per member.

Six members (and one member's wife) have died during the year, and of these four had been members since the society's formation in 1867. The total income for the year amounted to £195 18s. 11d., and the total expenditure to £138, which leaves a profit on the year's account of £57 18s. 11d., and this gives a grand total of

£1,348 8s. 2d. as the available funds, representing a value to each member of £10 15s. 6d., a gain of £1 per member during the year. The number of members at the present time is 126. The committee deeply regret the loss by death of Mr. Robert Featherstone, a senior trustee. At the special meeting held on December 5 it was resolved to adopt the committee's recommendation to make application to become a Branch of Grand United Order of Oddfellows.

CARDIFF AND COUNTY HORTICULTURAL.

JANUARY 30.—The annual general meeting of this society was held on the above date, under the presidency of Mr. J. Grimes. The statement of accounts for the past year showed the receipts to be £1,028 12s, 3d., with an expenditure of £950 5s. 7d., leaving a balance of £78 6s. 8d. in hand. The payments included the amount of the adverse balance of £175 due on the 1904 account. The dates for the next show were fixed for July 25 and 26.

SOUTHAMPTON ROYAL HORTICULTURAL.

FEBRUARY 5.—The annual general meeting of this society was held in the Council Chamber at the Municipal Offices on the above date. The Mayor, H. Cawte, Esq., presided over a small attendance.

The statement of accounts showed a total income for the past year of £707 11s. 4d. and expenditure and liabilities amounting to £729 1s. 9d., leaving a deficit of £21 16s. 1d. on the year's working, but as the society has a reserve fund amounting to £75 and stock valued at over £50, it possesses a total of assets over and above liabilities of £103 3s. 8d.

The report shows that, notwithstanding the improved excellence of each of the exhibitions, the gate receipts at both the Rose and the Autumn Shows were the lowest recorded for many years, unpropitious weather and counter attractions being credited with the cause. An urgent appeal is made for increased and additional subscriptions.

The society's Rose Show for 1906 is to be held on June 27 at the County Cricket Ground, and the hope is expressed that the holding of the show on this date will induce the trade growers to exhibit, The Carnation Show is to be held on the Pier as is usual, while the Autumn Show is to take place at the Artillery Drill Hall. The report and statement of accounts were adopted, after which the following officers were elected:—President, Sir Samuel Montagu Bart.; Chairman, Mr. H. J. Blakeway, together with the other retiring members of the Council, and the Secretary, Mr. C. S. Fuidge, who now enters upon his 34th year of service and who has been associated with the management of the society for over 40 years.

NATIONAL CHRYSANTHEMUM.

FEBRUARY 12.—On this date the Executive Committee held a meeting at Carr's Restaurant, Strand, Mr. Thomas Bevan presiding.

It was resolved that the acting Secretary's salary for the ensuing year be fixed as before at the rate of £100 per annum.

The election of the new Committees excited considerable interest and, in some cases, competition. One-third of the Floral Committee retires annually in rotation, and this election was the first item on the agenda. The ballot resulted as follows:—J. B. Riding, A. W. Seabrook, C. J. Ellis, W. Harrison, E. F. Hawes, W. Wells, H. J. Jones.

A Sub-Committee, consisting of Messrs. D. B. Crane, C. H. Curtis, and Harman Payne, were appointed to compile the necessary list of last season's novelties for inclusion in the schedule now in preparation.

Messrs. Ingamells, Hawes, and Moorman were elected as the new Financial Committee, and out of the various nominations for the Schedule Sub-Committee Messrs. John Green, W. Howe, P. A. Cragg, Ingamells, Oliver, G. Prickett, Simpson, Crane, Hawes, and Moorman were appointed.

Mr. C. H. Curtis, the secretary of the Publication Committee, made a brief informal report concerning the proposal to issue a Year Book, and promised a detailed report on the subject for the next Committee meeting.

Several new members were elected.

PLANT PORTRAITS.

REHMANNIA ANGULATA.—*Garten Flora*, t. 1547.

ROSE, MADME. ABEL CHATENAY, H. T.—*Revue Horticole*, February 1; a "Gold Medal" Rose raised by M. Pernet-Ducher, of Lyons, and said to be the product of a cross between Dr. Grill and Victor Verdier. The flowers are rosy carmine, shaded with orange and salmon.

TRADE NOTICE.

Mr. H. MARSLEN has been appointed manager at Mr. L. R. Russell's, Wood Lane Nurseries, Isleworth, in succession to his late father.

ENQUIRIES.

TIMBER FOR USE AS FIREWOOD.—I should feel obliged if any of your readers could refer me to a book on timbers from the firewood point of view. I want a comparative view of different woods, showing: (1) length of time required between cutting down and burning, (2) readiness of ignition, (3) endurance, (4) heat evolved, and (5) freedom from sparks and sputtering. *B., February 13.*

TRANSPARENT PAPER.—Can any reader inform *S. F.* where to obtain transparent paper used for the protection of plants.

ANSWERS TO CORRESPONDENTS.

ADDRESS: *G. B. The American Florist*, 324, Dearborn Street, Chicago, U.S.A. We know of no work on the subject you mention.

BASIC SLAG FOR LAWNS: *Tooting.* Basic slag contains free caustic lime, and it is the presence of this lime which renders the manure so useful as a fertilizer for strong soils or those which contain large quantities of humus, and hence are naturally acid by nature. Slag is very useful for any soils deficient in lime, but experience has shown that it is less good if used on light soils that contain little natural potash or not much humus. Therefore, when it is proposed to apply slag to lawns one has to be guided by the character of the soil. For strong, clayey soils 10 cwts. per acre may be used, or 4 ozs. per square yard. For sandy and the higher class of soils 7 cwts. per acre, or 3 ozs. per square yard, will be sufficient, to which must be added 2 ozs. of kainit, or 1 oz. sulphate of potash, per square yard. These manures should be applied during the month of February, if possible.

BASIC SLAG OR LAWN SAND: *W. S.* These two substances are quite different in character, and are used for very different purposes. Basic slag is applied to add both lime and phosphoric acid to the soil, and therefore is of little use for very poor lawns. It must have natural potash and humus to act upon, otherwise no good effect will be apparent. Lawn sand is used especially to destroy moss on lawns, and to give a stimulus to the grasses. If your lawn is infested with moss it shows poverty of soil, and basic slag would be of no service. In this case use for the area you mention 10 lb. superphosphate, 4 lb. nitrate of soda, and 1 lb. sulphate of iron. These may be mixed together and sown any time within the next month. If your lawn is in fairly good condition and contains a moderate quantity of humus (decaying root-fibrils), and does not suffer from drought, then apply 20 lb. of basic slag to the area mentioned. Slag is of no use to very dry soils. There must be a certain amount of moisture to combine with the acid of the soil, and this slightly acidified water acts directly upon the phosphate present in the basic slag. During the month of April apply to the lawn which has had the slag 5 lb. of soot or finely sifted fowl manure, to be sown during damp weather.

CARNATIONS DISEASED: *C. L.* The name of the fungus responsible for the disease is Helminthosporium echinulatum. The fungus vegetates between the two membranes of the leaf, and it is difficult to destroy it by external remedies. Pick off and burn all the diseased leaves and destroy any plants badly affected. Spray the remaining plants and their surroundings with weak Bordeaux mixture, or dilute permanganate of potash (Condy's fluid).

CORRECTION.—Our correspondent, *Mr. A. D. Burney*, points out that the word "manuring" in the seventh line of his note on page 91, should have read "knowing."

CYCLAMEN: *A. B.* The unhealthy appearance is due to thrip. Soak the foliage in a solution of tobacco water.

CYPRIPEDIUM: *R. W. Rickards.* The original record of C. × Leeanum is insigne × Spicerianum, and doubtless that was correct worked both ways for the earliest batches. But later batches were raised in many gardens with what were called varieties of × C. insigne viz., C. i. Chantini and × C. i. punctatum violaceum. Some of these were, however, the natural hybrid C. nitens, imported freely with some true insigne, and in some of the forms not distinguishable from true C. insigne, although study has shown that they are natural hybrids of C. villosum and C. insigne, In batches where such so-called C. insigne has been used as a parent the latent C. villosum comes out in some of the hybrids in a most extraordinary manner. There is no blame to the raisers of the varying seedlings, for even an expert cannot be certain in all cases, but in the progeny you get a clearer view in reverting forms. You may say, then, why call them Leeanums? The answer is that they cannot be called anything else.

FRENCH GARDENING PAPERS: *G. H. Le Jardin*, 6, Rue de l'Abbay, Paris; *Revue Horticole*, Rue Jacob 26, Paris 6e.

GRUBS AMONG FERN ROOTS: *H. G. P.* The grubs are those of one of the weevils. These are disastrous pests and must be removed or they will in time kill the plants. Turn the ferns out of their pots and soak the "balls" in a weak solution of extract of quassia. A plan of capturing the beetles is to place slices of Potato or Carrot on the soil in the pots.

HYACINTHS: *H. H.* For some reason or other the bulbs did not develop flowering spikes last autumn, although they have since grown very well and have rooted freely. That the bulbs were incapable of flowering may be due to imperfect ripening last season, or to the bulbs being too young. Your system of cultivation appears to have been the proper one.

NAMES OF PLANTS: *W. G. S., Lancaster.* An imperfectly developed specimen of Cattleya Trianæ.—*A. E. M., Bristol.* 1, Cypripedium Boxalli; 2, appears to be intermediate between C. Boxalli and C. insigne; 3, C. insigne. If all were imported together the variation of No. 2 would be explained as suggested.—*E. C. C. D.* Euonymus radicans variegata, Cotoneaster Simonsi.—*I. T.* Cypripedium nitens. The Cattleya bulb shows disease and such plants rarely recover. It would be better to burn all badly affected.—*F. B.* 1, Begonia hydrocotylæfolia; 2, Begonia fuchsioides.—*E. H.* Iris japonica, syn. Iris chinensis; commonly known in gardens as Iris fimbriata.—*A. H.* 2, Tsuga Hookeriana; 3, Picea Morinda; 4, Pinus Cembra (probably); 5, Cupressus (Retinospora) obtusa; 6, Arbutus Unedo; 7, 8, 9, 10, 11, Your specimens were so badly labelled and packed that we are unable to name the others as the labels were mostly detached.—*F. S.* Boussingaultia baselloides.

POTATO, POTATOS: *H. S. W.* Very many years ago, when the *Chronicle* was young, by some oversight the "e" was, on one occasion, left out of the plural noun. The then editor, recollecting that the word was often spelt without the final "e" in the singular, determined that in future the "e" in the plural should, in the *Chronicle*, also be deemed superfluous. The present editor found the system in use and has retained it. In order, however, to obtain support for the practice, he submitted the case to the late Dr. Latham. In reply the great scholar said that our version, if unusual, was correct, and that we were merely anticipating a usage which would become more and more general, as indeed time has proved in the case of other nouns ending in "o" in the singular. The lexicographer complimented us on being up-to-date, and we hope to continue so.

COMMUNICATIONS RECEIVED.—H. C.—S. C.—W. S.—D. S. F.—A. C. F.—A. H. W.—N. E. B.—E. H. B.—H. M.—J. F. B.—R. P. B.—H. B.—T. G.—H. W.—W. B. H.—Chloris—F. L.—F. J. V.—W. H.—E. H. W.—W. M.

For Market Reports, see page xviii.

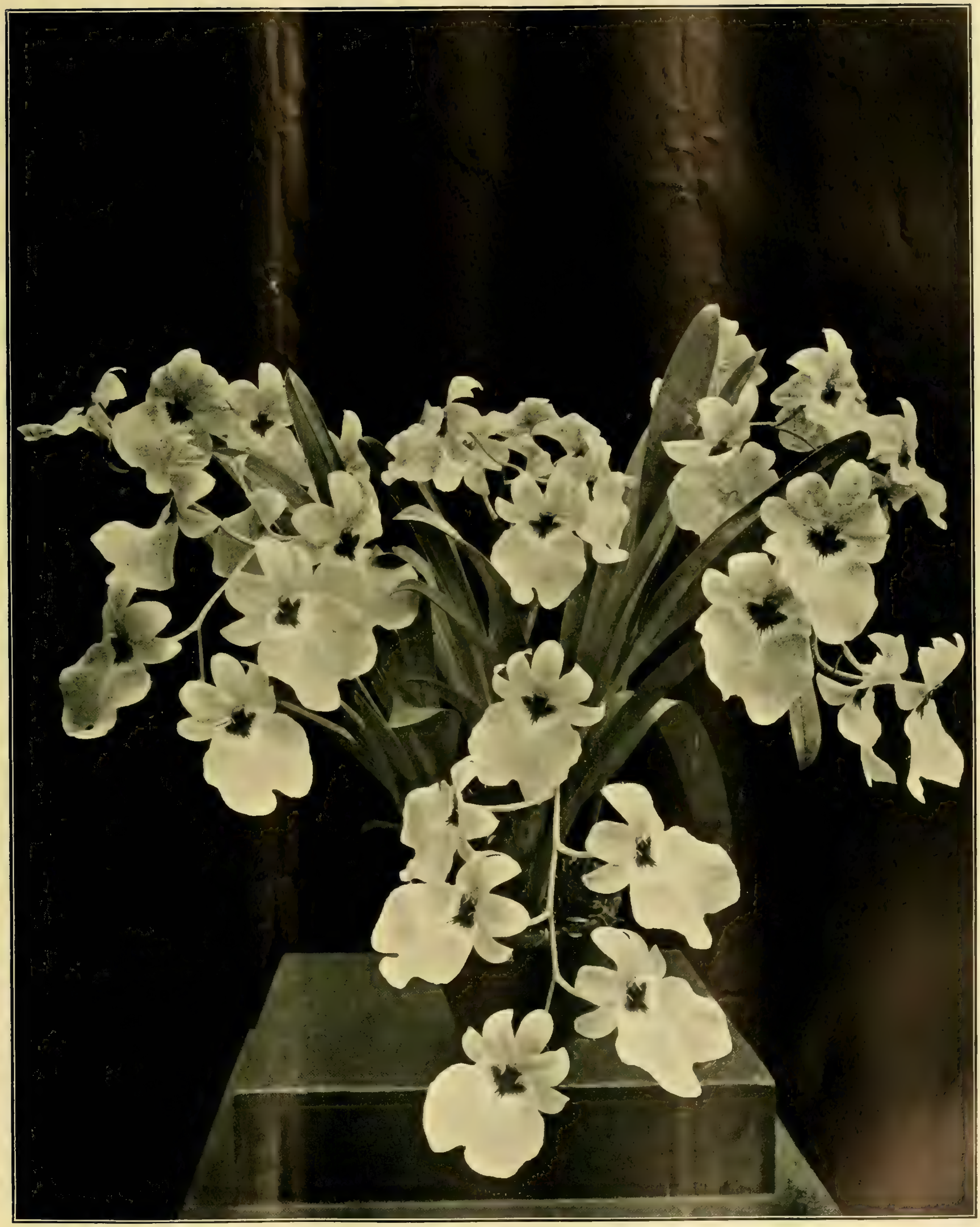

Photo by F. T. Lamb.

MILTONIA VEXILLARIA, VAR. EMPRESS AUGUSTA VICTORIA, FROM THE COLLECTION OF MAJOR HOLFORD, WESTONBIRT, GLOUCESTERSHIRE.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C

THE
Gardeners' Chronicle
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ORCHIDS AT WESTONBIRT.

(See Supplementary Illustration.)

MANY of our readers had the privilege of inspecting the superb display of Orchids made by Major Holford in the Royal Horticultural Hall, Vincent Square, Westminster, on February 13th, and all who did so will agree that never was the gold medal of the Royal Horticultural Society more deservedly awarded than it was on that occasion. All the specimens shown were examples of unusually successful cultivation, and they were grouped together and relieved in such a manner that the general effect of the display was as good, or even better than, has previously been afforded by an exhibit of Orchids in the new hall. The public spirit shown by Major Holford and other amateur exhibitors in their willingness to incur the trouble and expense of bringing so many choice and valuable plants considerable distances, in order to make these meetings so attractive as they are, is beyond praise.

The following account by Mr. James O'Brien of the conditions under which the Orchids are grown at Westonbirt may be of interest to many of our readers, in consequence of the excellence of the plants so recently exhibited from that collection.

"The collection of Orchids in the gardens of Major G. L. Holford, C.I.E., C.V.O., at Westonbirt, Tetbury, Gloucestershire, is contained in fifteen modern Orchid houses, the greater number of which constitute a recently-constructed block erected by Messrs. Mackenzie and Moncur, of Edinburgh. This range of buildings is complete in every detail, and nothing likely to aid in the successful culture of the plants appears to have been omitted. The heating of the block is perfect, and to this feature Mr. H. Alexander, the Orchid grower at Westonbirt, attaches great importance, for, in his opinion, irregular temperature, either from faulty heating apparatus or from bad management, is one of the most common causes of unsatisfactory results. The houses are chiefly span-roofed structures running at right angles to the connecting corridors. The floors of the houses are formed of the natural earth surfaced with clean shingle or some other moisture-holding material, a neat trellis covering the walk. The light but strong stagings are generally of open teak wood in two tiers; on the higher the plants are placed, the lower being covered with cocoa-nut matting and leaves, kept damp for the purpose of evaporating moisture. In some instances a temporary wire-work is placed about a foot above the hot-water pipes and between them and the lower stage. This is also covered with some moisture-holding material similar to that on the lower staging. Thus a suitable but not excessively warm temperature is maintained, which accounts greatly for the robust condition in which all classes of Orchids are seen at Westonbirt, the Odontoglossums especially, which have pseudo-bulbs, superior to any seen in their natural habitats.

POTTING MATERIAL.

"Another important question which seems to have been finally settled at Westonbirt is that of the best material for potting. Good peat of Bracken fibre more or less mixed with sphagnum moss, was always believed in and used with fair success. But good peat was not always obtainable, so when the 'leaf-soil' prescription was commanding attention elsewhere, a careful use was made of it at Westonbirt, but for many reasons it was soon abandoned. Ultimately, American Osmunda fibre was tried, and with such marvellously good results that it has almost displaced the use of peat. As to the benefit from the change, a glance at the Westonbirt Orchids, individually and collectively, gives the best of all testimony. With Osmunda fibre, however, as with other materials, care in watering is the leading point to be observed. Cypripediums and terrestrial Orchids are still potted in the material formerly used generally.

"Orchid growing at Westonbirt has been carried on for many years, and although most of the old favourites have disappeared under the old methods of culture, there is still a small collection of Vandas, and some other plants known to have been in the gardens for more than fifty years. An interesting example is a small plant of Cattleya Hardyana, which nearly died, but which is now, like the other older inhabitants, rejuvenated. This plant is believed to have been the first C. Hardyana to flower in Europe, as it bloomed before the specimen which the late Mr. George Hardy showed before the Royal Horticultural Society in 1885. Evolution has resulted in the present-day collection being composed very largely of hybrids raised at Westonbirt during the time Mr. Alexander has had charge, and the countless plants of all sizes, and the size and vigour of a large proportion of them, which either have flowered or will soon do so, are almost incredible, in view of the short space of time in which the work has been accomplished. Some of the methods under which such good results have been attained may here be mentioned, such as the allowing of fairly liberal pot-room to all plants as soon as they are rooting vigorously in the first small pot; the absence of any set time for repotting the plants of any house, or stated class of Orchids, each plant being repotted when necessary, that is at the time when the roots begin to push strongly on the last growth, for by so doing the new roots at once take advantage of the fresh material. Thus managed, the small hybrid Cattleyas and Lælio-Cattleyas in their early stages have, in some cases, pseudo-bulbs as broad as they are high, and a relatively sturdy condition is maintained up to their flowering periods and onwards. Some two hundred crosses of Cattleyas, Lælias, and Brassavolas in which none but the best parents, albinos, and rare varieties have been used, have been effected.

"The corridor connecting the houses contains a large quantity of these hybrids, both on the stage and suspended from the roof. Some are in flower and a great quantity in sheath.

ODONTOGLOSSUMS.

"Referring to the principal classes in the houses connected by the corridor, mention may be made of a magnificent lot of Odontoglossums, the O. crispum in flower being of the fine broad-petalled type. With these in bloom are some good forms of O. Andersonianum and other showy varieties, while suspended overhead is a number of well-flowered plants of O. Rossii majus, and O. Cervantesii. In another house is a fine collection of the largest type of O. crispum, and other Odontoglossums, many being in flower. All show the same remarkable vigour, among them being O. crispo-Harryanum, with fleshy leaves nearly three inches in width, and another fine Odontoglossum, which, from a single pseudo-bulb in 1904, made five leading pseudo-bulbs in 1905, and is now a great mass of growth, with twelve strong leading shoots. Some fine things in bloom are O. loochristiense, and its remarkable variety, 'Lord Howick'; handsome plants of O. Adrianæ, O. Wilckeanum, etc. Next follow several houses containing hybrid Cattleyas, Lælias and Lælio-Cattleyas, with a collection of white forms of Cattleya labiata, C. Mossiæ and other large-flowered Cattleyas. Some of the crosses are interesting, among them Cattleya citrina × Brassavola Digbyana and Lælia anceps Schroderiana × Cattleya aurea. Sophronitis gradiflora forms large masses, and a number of specimens, each with from ten to fifty large, brilliant scarlet flowers, makes a fine show. This plant is here grown under cool treatment, and appears to double the number of its flowering growths every year.

"Lælio-Cattleya Charlesworthii, L.-C. Cappei, and other crosses of L.-cinnabarina present a fine show of orange-coloured flowers with crimson and purple lips.

"Phalænopsis Rimestadtiana and P. Schilleriana are finely in bloom, some of the latter bearing flowering spikes with nine branches and about eighty flowers.

CATTLEYAS.

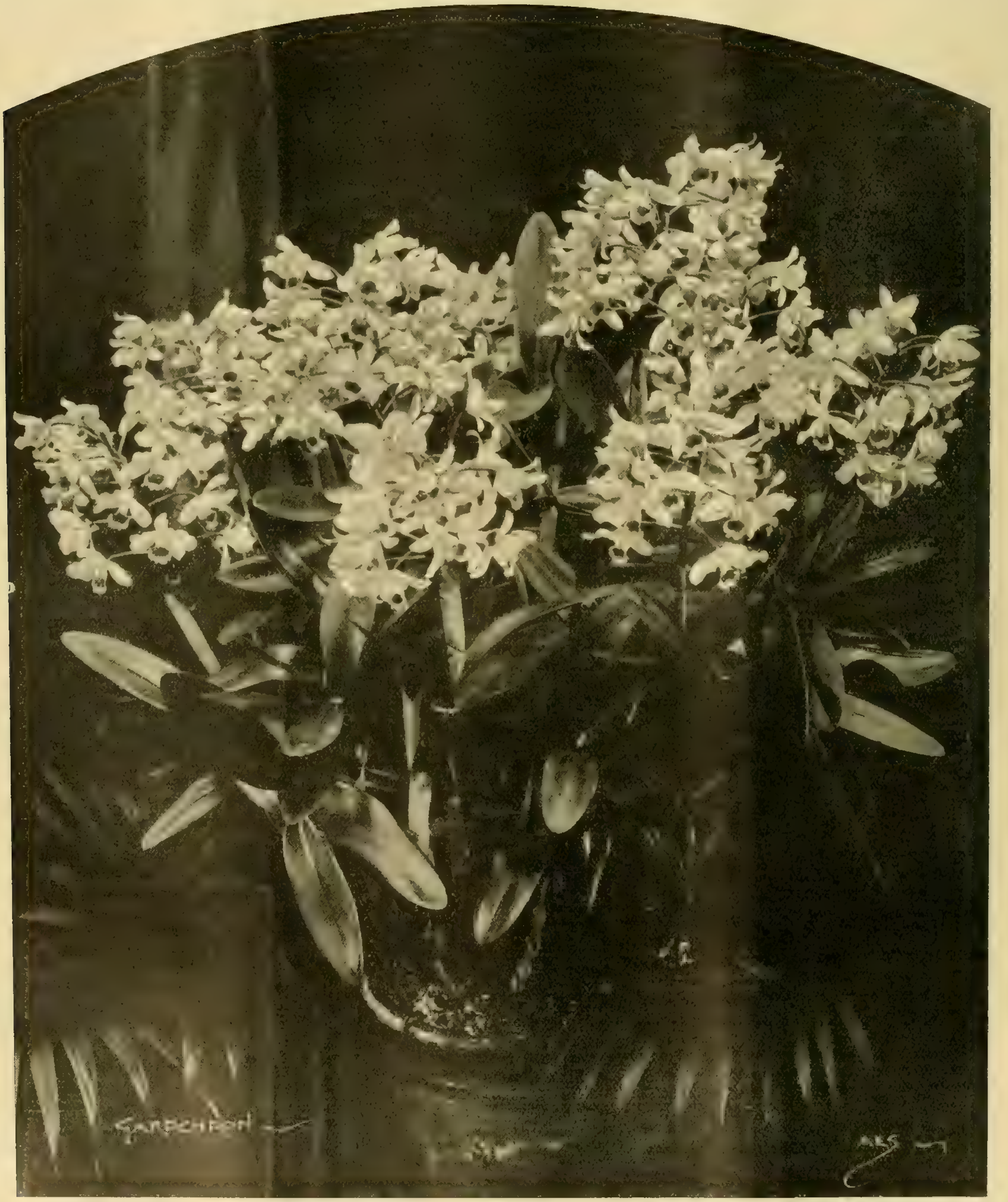
"The Cattleya houses present a fine sight, the plants in flower being principally C. Trianæ. C. T. Westonbirt variety is a handsome form. An instance of what may be done by good culture is given by another pretty light form of C. Trianæ, which from a small plant has, in a short time, multiplied into several strong specimens, bearing between them 26 flowers. C. T. Russelliana and other old favourites are in bloom. A singular circumstance is noted in the case of two plants bought from collections widely separated, and under different names, although evidently from the same original plant. Both are bearing badly developed flowers (the only instance in the collection), doubtless an occasional peculiarity with the plant. Cattleya Percivaliana is well in bloom. A grand specimen of Lælio-Cattleya elegans has produced nearly 100 flowers, while other smaller plants are also in bloom.

"Dendrobium Wardianum, with its pure white variety ochroleucum, and some hybrid Dendrobiums brighten the houses with their flowers; a grand specimen of Epidendrum radicans, trained over the end of a house, has over 120 heads of its large orange-scarlet flowers.

The Span Range.

"In the three-quarter-span range is a fine display of white varieties of Lælia anceps, and another long house is literally filled with the fine and varied flowers of favourite Cypripediums. Many of those in bloom are new crosses raised at Westonbirt, and some of these have outstripped all others in their classes, such as, for instance, C. Alcibiades magnificum, C. Milo Westonbirt variety, and C. Niobe Westonbirt variety. C. Sallieri has been found a very satisfactory parents, and many of its hybrids are very choice varieties; for example, C. Scipio, the result of C. Sallieri × Mrs. Tautz, while a fine type of C. Boxalli crossed with the Westonbirt C. Euryades has resulted in a grand flower heavily marked with rich mahogany red. Some of the specimens of C. Leeanum varieties, and others, have 20 or more flowers, and are beautiful objects. Two houses containing hybrid Cypripediums, many approaching the flowering stage, serve to ensure a supply of fine novelties for some years to come.

"A batch of Miltonia vexillaria is in excellent condition, even small plants have five or six flowering spikes. [See supplementary illustration to this issue.—Ed.] The large specimen plants of Cymbidium have numerous inflorescences, some already in bloom, including the rare C. Lowiograndiflorum, and C. eburneum, C. eburneo-Lowianum has eight spikes, some with seven



[Photo by *E. T. Lamb.*

FIG. 45.—CATTLEYA BOWRINGIANA, FROM MAJOR HOLFORD'S COLLECTION.

flowers, and others are gigantic specimens. With them is a grand clump of Ada aurantiaca, good Odontoglossum Edwardi, Oncidium macranthum; a nice batch of showy Masdevallias, and, in the collection of Sobralias, a large specimen of the original Sobralia Holfordi, by far the largest rose-purple Sobralia of the macrantha section. Vanda Kimballiana is grown in very large masses, and V. teres, including the blush white variety Aurora; a strong specimen of the carmine scarlet Sophro-Lælia laeta Orpetiana, Sophro-Cattleya Chamberlainiana, and other hybrids, with Sophronitis grandiflora; Cattleya The Czar, C. Berthe Fournier, Westonbirt variety, and a host of other rare things were passed in review.

"Major Holford takes the greatest interest in his Orchids, and knows every plant in his collection. Seeing the wonderful state of perfection to which his collection is brought, his enthusiasm is easy to understand.

"The famed collection of Amaryllis is about to be plunged in leaves in a gentle bottom-heat. Such large bulbs as are seen should produce flowers even better than previously, if that be possible. One bulb weighed 2lb. 6oz., and was but a fair sample of the best."

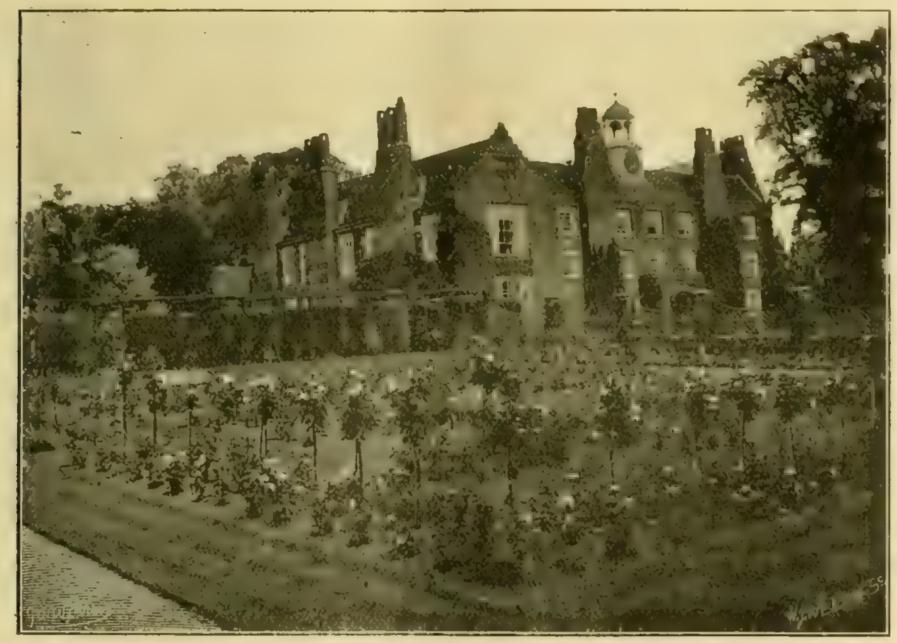


FIG. 46.—THE ROSARY AT LOFT'S HALL, ESSEX.

NEW AND NOTEWORTHY PLANTS.

PLEIONE YUNNANENSIS, ROLFE.*

A CHARMING little novelty was exhibited at the last R.H.S. meeting, held on February 13th, by Messrs. Sutton and Sons, Reading, as "Orchid sp. from China." It also appeared at the meeting of the Scientific Committee, and received a Botanical certificate. I recognised it as one of several species of Pleione which I had described from dried specimens, and now that Messrs. Sutton have sent flowers to Kew I find that it is Pleione yunnanensis, a species discovered by Mr. W. Hancock, F.L.S., in the province whose name it bears, the locality being given as Mengtsz, in mountain pastures at 6,000 to 7,000 feet, flowering in March. It was also collected there by Dr. A. Henry, on grass mountains at 5,500 feet. It is an elegant little plant, like several of the Indian ones, flowering in advance of the leaves, but having rather smaller flowers. These are produced on erect scapes, three to four inches high, and bear a certain resemblance to those of P. lagenaria. They measure about two and a quarter inches in diameter across the petals. The sepals and petals are oblong in shape, gracefully recurved, and light rosy purple in colour. The lip is beautifully fringed, less than an inch broad in front, and lilac, with numerous irregular bright purple blotches, while the disc bears five deep, slightly undulate keels The side lobes of the lip are striped with purple toward the base. Messrs. Sutton have had the plant three or four years, and the pan exhibited by them had three expanded flowers and several buds. It is an interesting addition to the genus. *R. A. Rolfe.*

A NEW SPECIES OF RODGERSIA WITH PINNATE LEAVES.*

IN the *Gardeners' Chronicle* of August 23, 1902, p. 131, Dr. A. Henry gives a synopsis of the four species of Rodgersia then known. A fifth species was discovered by Mr. E. H. Wilson in June, 1904, growing at elevations of 9,000 to 10,000 feet, in the Yalung Valley, about 100 miles west of Tatien-lu. It was just coming into flower at the time, and it is from a very young specimen that I have drawn up the accompanying description. As in the case of the Lilac I recently described in these columns, no seed being obtainable, the discoverer brought away a few roots, and the plant is now growing in Messrs. James Veitch and Sons' nursery at Coombe Wood. The dried specimens before me are between 2 and 3 feet high, the simple stems bearing one large pinnate leaf, and an entire one just below the inflorescence. The largest leaf, including the long petiole, is nearly 2 feet long, and it is probable that under cultivation all parts of the plant will attain larger dimensions. Somewhat unfortunately the appropriate name pinnata has been given to another species which has quasi-pinnate leaves, as may be seen in the figure accompanying Dr. Henry's description. However, the name given to the new species is quite appropriate, the leaves being very similar to those of the common Elder, as well as to those of Sambucus javanica. The leaflets are 9 and 11 in number respectively in the two fully-grown leaves under observation, and they are thin, oblong, serrated, and 4 to 6 inches long. The only inflorescence is about 3 inches long, and the flowers unexpanded. At present I am unable to say anything about its relative merits as an ornamental plant, but it is very different from the four previously described species. *W. Botting Hemsley.*

ROSARY AT LOFT'S HALL, ESSEX.

THE Rosary illustrated at figs. 46 and 47 forms part of an old kitchen garden walled in on three sides, and bounded on the fourth by an evergreen hedge, and was made and planted by Mr. George Paul. The north wall was taken down and rebuilt with panels of open lattice work, through which the Roses can be seen from the drive up to the house, and when festooned with Wistaria, which it will be in a year or two, it will form a very pretty picture. The beds for the Roses have been cut out on grass, and a width of bed has been adopted which enables almost every plant to be reached for cutting purposes without trampling on the beds. The Roses were planted in March last, and the photograph was taken in June. Under the care of Mr. George Jordan, whose successes from Hawksted at the National Rose Society's Exhibitions are so well known, it is needless to say the Roses did exceedingly well. The garden was planted in the following manner:—

In the border next to the front court there are two rows of Standard Teas to show through trellis and a row of Dwarf Teas, edged with border Carnations.

The corresponding border on the other side contains masses of Provence and garden Roses, edged with Dwarf Polyantha varieties. Each of the four round beds has one Weeping Wichuriana Rose and twenty dwarf yellow-flowered plants. The two outer corner beds are planted with rose-coloured varieties; the two corresponding outer corner beds with crimson varieties; the two inner angled beds with pink Roses; and the two corresponding inner angle beds with blush and white-flowered varieties.

Along the herbaceous border at intervals of 10ft. Penzance Briars were used as pillars, and the pergola was planted entirely with Roses, so that the whole garden was encircled with Roses.

It is not necessary to enumerate all the varieties used, but of crimson varieties there were Victor Hugo, Madame Victor Verdier, Dr. André, Bruce Findlay, and Liberty. In rose colours, Countess of Rosebery, S.M. Rodocanachi, Rev. A. Cheale, and others. In yellows, Marie van Houtte, Madame Hoste, Madame Ravary, Francisca Kruger, Madame C. Guinoisseau, etc. In pinks, Caroline Testout, Mrs. J. Laing, Killarney, and others. In blush and white, Frau Karl Druschki, Viscountess Folkestone, Augustine Guinoisseau, Paul's Early Blush, etc.

The old manor house, Loft's Hall, is the seat of Sir James Bayley, situated about four miles from Audley End Railway Station, on the Great Eastern Railway. It is a charming old house, with gables and old-fashioned chimney stacks, and the gardens are on ascending slopes from the front to the back of the house. One of the chief features of the place is its very fine fish ponds, one of about an acre. The church, though not seen in the picture, is to the right-hand of the house, and, as in many old-fashioned parks and gardens, seems a part of the estate.

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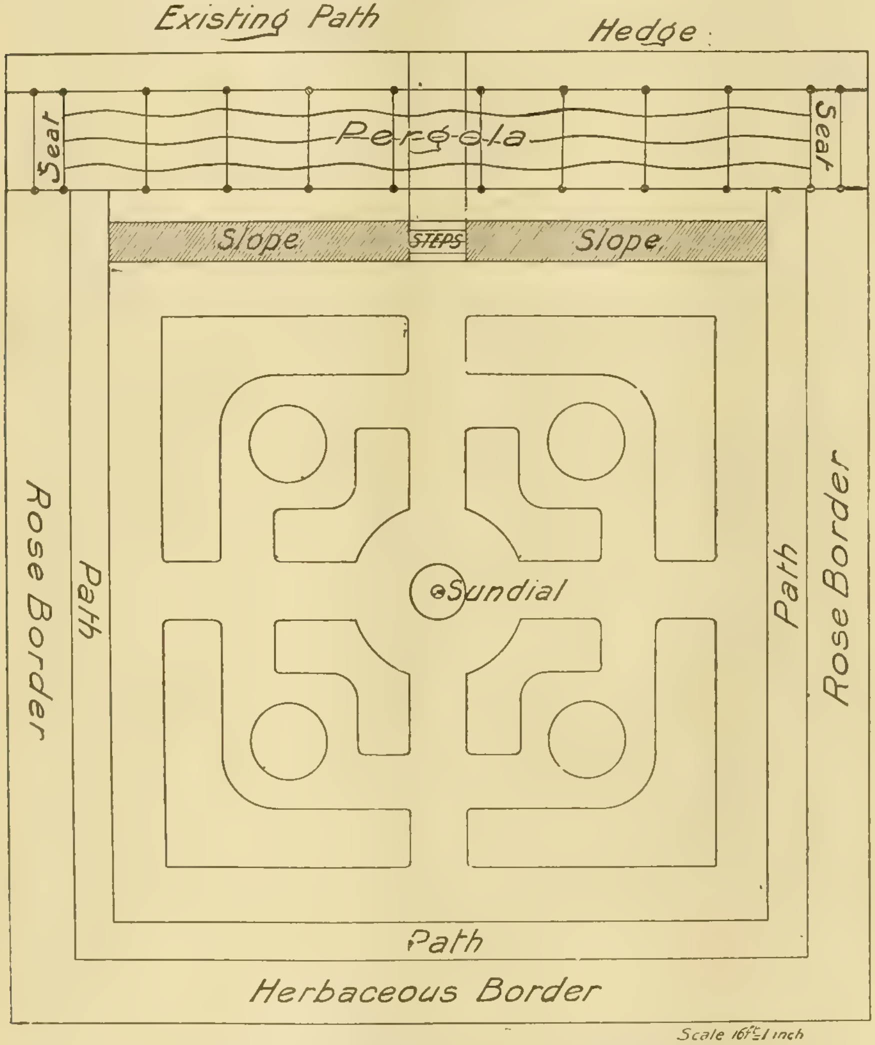
* Pleione yunnanensis, Rolfe in *Orch. Rev.*, 1903, p. 292. Cœlogyne (? Pleione) yunnanensis, Rolfe in *Journ. Linn. Soc.*, xxxvi., p. 23.

* *Rodgersia sambucifolia*, Hemsley; ab omnibus speciebus hucusque cognitis foliis vere pinnatis 9-vel 11-foliolatis recedit.

Herba 2–3 pedalis, sparsissime arachnoideo-hirsuta. *Folia* radicalia non visa; caulina solitaria vel bina, imparipinnata, 9-vel 11 foliolata, longe petiolata, cum petiolo communi 1–2 ped. longa; foliola subsessilia, membranacea, sub-opposita, oblongo-lanceolata, 4–6 poll. longa, 1–2 poll. lata, acuta, basi cuneata, per totam longitudinem serrulata; venæ subtus sat conspicuæ; petiolus basi pilis longis arachnoideis brunneis vestitus. *Inflorescentia* pubescens, parva, terminalis, dense cymoso-paniculata, cum pedunculo elongato circiter pedalis; pedunculus folio unico simplici instructus. Bracteæ et bracteolæ omnino deficientes. *Flores* parvi inconspicui. *Sepala* 5–7, carnosa, ovata, sesquilineam longa, subacuta. *Stamina* 10–14, quam sepala breviora (immatura?). *Styli* 2 carnosi, stamina æquantes. *Fructus* ignotus.

LATE DESSERT PLUMS.

Late varieties of Plums are useful for extending the season when choice dessert fruit is available, and are worthy of more extensive cultivation, especially in gardens where wall space can be afforded them, for wall-trained trees undoubtedly produce fruit of the highest flavour and best quality. With care and attention trees planted on walls of various aspects will furnish delicious fruits until quite late in the season. I have heard of some growers who have been enabled to keep these fruits in good condition until Christmas, but although I have taken all the necessary precautions and have excellent means of storage I have not been able to keep them so late as Christmas by four weeks.



Plan of Rose Garden

(See text, page 115.)

In many gardens room might be found for a few late Plum trees to take the place of some of the many Peach trees, whose fruit arrives at maturity rather inconveniently at the same time. Walls facing west present a most suitable aspect for the planting of Plum trees. In some gardens Peach trees fruit very unsatisfactorily on walls with this aspect, and much time and labour is unprofitably expended on these trees and valuable wall space is lost. Given good cultivation Plum trees will yield fine crops with much less attention than is required for Peaches.

Some varieties of Plums are much improved in flavour when shrivelled, and should not be gathered until this has taken place. The Plums when gathered should be perfectly dry, and it is most important to allow the stalks and fruit to remain intact, otherwise many of the fruits will decay. I usually gather my crops by cutting the individual fruits from the tree with a knife or with a pair of scissors. They are then very carefully laid on cotton wool and carried to the fruit room, and not allowed to become bruised in the process. Wrapping each fruit separately in tissue paper has no advantage; they should rather be laid out thinly on paper in a cool fruit room. A sharp eye should be kept for any fruits that are inclined to decay; these should be removed immediately. Coe's Golden Drop is the leading favourite with the majority of growers, and although of excellent quality, whether procured from north, south, east, or west walls, there are other varieties equally serviceable. Angelina Burdett, classed by some authorities amongst the Gages, is a variety ripening about the middle of September, and by allowing the fruits to hang and become shrivelled the saccharine matter is so increased as to make it a perfect sweetmeat. Ickworth Impèratrice, although not a "gage," remains serviceable for a long time when treated in the same manner as the last-named. The fruit is of medium size, roundish-oval in shape, and of a purple colour, and when shrivelled is rich and juicy.

Bonne Bouche Gage is of excellent flavour and of the same type is Bryanston Gage, and Reine Claude de Bavay, the former ripening at the end of September, while the last-named will hang during a dry autumn well into October. Guthrie's Late Green is also a valuable late Plum of good flavour. I have seen this variety hanging on the trees in good condition, in the Midland counties, in November. Braby's Greengage is much later maturing than the old type, and is a most delicious variety.

The Transparent Gages are all delicious fruits, and the trees possess a vigorous constitution. Transparent, Golden Transparent, and Late Transparent are valuable Plums, keeping in good condition some time after the fruits have reached maturity. Reine Claude Comte d'Althann, a variety introduced from Bohemia, comes with a good reputation as a valuable late red Plum. Up to the present time I have not fruited this variety.

Low walls can be planted with trees trained horizontally, which are the best for this purpose.

Young trees require to be carefully root-pruned about every third year in order to keep them in a fruitful condition. By this means coarse, strong growth is checked, and the energies of the tree are directed into producing fruit-bearing wood. Cordon trained trees of the varieties named produce fine quality fruit, and by this system of training many varieties may be planted against one wall. The distance between each tree should be 2 feet, the roots should be well restricted until the trees have arrived at a fruit-bearing age. *W. H. Clarke, Aston Rowant, Oxon.*

CULTURAL MEMORANDA.

HIPPEASTRUMS.

These plants resent frequent disturbance at their roots, so that whenever practicable top dressings of soil and the liberal use of manure-water should be afforded rather than the repotting of the plants, but should a larger-sized pot become absolutely necessary take great precautions not to damage the roots. A suitable soil consists of a mixture of firm loam, rotten manure, leaf-mould and a liberal quantity of sharp sand. Start them into growth in a temperature of 65° to 70°. It is not necessary to plunge the pots in tan or cocoa-nut fibre. Very little water will be needed until the growth commences. As the plants advance in growth admit air to secure strong and healthy foliage. Hippeastrums (Amaryllis) are useful decorative plants, both for use in the mansion and in the conservatory. After the flowers have faded place the plants in the greenhouse for the purpose of completing their growth, after which dry them off slowly, but never allow the roots to become dust-dry, even when dormant. When raising Hippeastrums from seed use 60-sized pots, placing one seed in each pot. Use a rather lighter soil than that advised for potting, and pass the same through a half-inch sieve. A shelf in a warm pit, near the glass, is a suitable place for the seeds to germinate. The seedlings should not be dried off until after they have flowered. *C. Ruse, Munden Gardens, Watford.*

POINSETTIAS AND EUPHORBIAS FOR USE AS CUT FLOWERS.

It is a common occurrence to find cut flowers of Poinsettias and of Euphorbia Jacquiniæflora when used for decorative purposes droop and wither a few hours after being cut. To prevent this it is necessary to subject the plants to a lower temperature with less moisture, a week or so before cutting. A temperature of 50° is all the plants require after they have developed their inflorescences, and the dryer the condition of the house the better will the flowers or plants be enabled to withstand the draughts and dry air of dwelling rooms. Equally important is the manner in which the flowers are handled when being cut. To prevent bleeding, it is necessary to have ready a pail of very hot water in which to insert the stalks after cutting them the required length and removing all unnecessary leaves. The hot water will prevent further bleeding and will quickly heal any wounds. A hot iron answers the same purpose, but its manipulation is not so simple or simultaneous as that of hot water. Various other methods have been tried for preventing bleeding, such as dipping the stems in sand, sealing the wounds with pitch or hot clay, but I regard the hot water plan as the simplest and safest. As decorative plants these subjects remain in much better condition if they are placed in stands or in baskets, but as plants they are not so adaptable for effective use as in a cut state. When used for dinner table decoration the stalks should be cut of the length required, all unnecessary leaves removed, and the same method to prevent bleeding adopted. Euphorbia Jacquiniæflora cannot be used for sprays or button-holes for the reason that if only a flower or a leaf becomes broken, the milky substance would stain the dress, *C. J. E.*

KNIPHOFIAS AND THEIR CULTURE.

(Concluded from page 101.)

HYBRID KNIPHOFIAS.

Much confusion exists in the nomenclature of hybrid Kniphofias, and it is no uncommon circumstance for a plant to bear half-a-dozen names. Most of these hybrids are improvements on the specific types, but several are coarse, ungainly, badly coloured and unworthy of garden room. More recent hybrids have K. Macowani, K. Burchelli, and K. citrina as parents, and these are a great gain, being of neat tufted habit, marked floriferousness, and the spikes bear inflorescences that may be described as marvels of delicate colouring and symmetry when compared with the older hybrids such as Star of Baden-Baden and others whose stamens are much exserted. No good purpose can be served by detailed enumeration of all known hybrids, but a selection of those which are most showy and refined, made over a period of several years from a complete collection, will doubtless be helpful to planters, together with brief descriptions of their height, habit of growth, and colour of flowers.

Chloris.—A vigorous pale green-leaved plant 6 feet in height and as much in diameter, flowering in August. Spikes cylindrical, of apricot yellow colour throughout.

Chrysantha.—A small plant 2 feet in height and in diameter. Flowers of canary yellow colour, the spikes tipped with green and produced in sheaves from August onwards. A seedling from K. citrina.

Diana.—A strong grower, with towering spikes of bottle-brush-like flowers coloured scarlet, suffused with buff. Anthers much exserted.

Excelsa.—A giant plant 6 feet in height, bearing enormous spikes of light crimson flowers, fading to orange colour. The spikes often have three apices.

Golconda.—A broad-leaved, sturdy variety of rapid growth, yields symmetrical spikes of apricot-tinted flowers in foot-long cylinders. Anthers slightly exserted. Very showy and free-flowering.

Heroine.—Resembles Golconda, but with coral-tinted anthers much exserted, giving the inflorescence a hairy appearance.

Henry Cannell.—Plants 3 feet in height and in diameter, bearing long inflorescences of a uniform rich shade orange scarlet colour, slightly yellowed at the base. A capital border variety.

John Waterer.—Resembles Henry Cannell, but more coral than scarlet, and the spikes are cone shaped.

J. Sallier.—A new hybrid of rich scarlet, very strong and stately in habit.

John Benary.—An old-time hybrid with loose cylindrical spikes of deep red flowers, passing to orange, then to yellow. As nearly flame-coloured as is possible. Flowers in August.

Lachesis.—Pretty and refined spikes of deep yellow flowers, the anthers of which are coral-tinted and slightly exserted. Height, 6 feet.

Leda.—Produces cylindrical inflorescences half the length of the spike in July and August. Flowers coral red with orange anthers slightly exserted. Foliage sub-prostrate and pale-green, giving the plant the outline of an Eremurus.

Lemon Queen.—Hybrid seedling of K. citrina. Plant neat habited, free-flowering, producing in August cone-shaped inflorescences of a canary yellow tint, greyish white at the base and greenish yellow-tipped. A very choice and showy form which, in my view, is the best of the smaller habited plants.

Matador.—Resembles Leda, but flowers in September. Bears cylindrical spikes of dark-glowing crimson flowers entirely self-coloured. Plant prostrate, spikes 6 feet in height.

Meteor.—Of straw-yellow colour, the perianths lined with coral, the anthers also coral-tinted and exserted. A good variety of the bottle-brush type and very vigorous. Inflorescences 18 inches long, in September.

Obelisk.—A noble plant 6 feet in height, leafage broad and lustrous. Inflorescence 18 inches long, of golden yellow colour, symmetrical and wonderfully clear in colour. A refined, chastely-coloured "Star of Baden-Baden."

Ophir.—Resembles Obelisk, but has coral-tinted exserted stamens and perianth tubes much distended at the throat.

R. C. Affourtit.—This is best described as a glorified corallina. Flowers continuously throughout summer. The inflorescences are distinctly cone-shaped with reflexing perianth lobes, and several are produced together.

Rufus.—A selection from Lemon Queen. Flower heads cone-shaped, canary yellow below orange scarlet above, rarely exceeding 3 feet in height.

Sirius.—Has attenuated inflorescences of reddish orange colour with scarlet anthers much exserted. Grows 6 feet high, and generally has one to three subsidiary spikes at the base of the central inflorescence.

Seraph.—A compact plant 2 feet in height, bearing cylindrical saffron-coloured inflorescences. Its habit is similar to that of Macowani. Flowers in August.

Solfaterre.—Has quaintly coloured spikes of a short and sturdy character, grows about 2 feet in height and bears yellow inflorescences with orange-coloured base and greenish tips. The sunny side of the spike is of orange-red colour, and the shady side greenish-yellow. Pretty and distinct form for planting in borders.

Stella.—A tall and stately variety bearing bronzed scapes 3 feet long, and maize-yellow coloured inflorescences of great beauty. The spikes are a long time developing, and the resemblance of the spikes to "cobs" of maize is very marked till the flower lobes reflex.

Tricolor.—Is a dwarf variety of Lemon Queen, and has quaint, bluntly cone-shaped inflorescences that are coloured straw-yellow at the base, red at the top, and canary yellow about the middle. A neat variety whose spikes are produced in considerable quantity in late summer.

Triumph.—A showy and popular plant coloured deep yellow, with much exserted coral-tinted stamens. Before the flowers expand the yellow is very soft and pleasing, but the anthers change the colour scheme to coral red with the yellow showing here and there. Grows 5 feet in height, and invariably has two or three subsidiary spikes partially developed at the base of the main one. Two new varieties, *Henry A. Dreer* and *R. Wilson-Ker*, are of much promise. Both varieties flowered when others of the same type were in a condition to admit of comparison. The former resembles K. Macowani Brilliant, the latter the hybrid excelsa, but the spikes are simple and possibly a little richer in colour.

Another series of hybrids, marking a distinct break from the usual run of Torch Lilies I have reared from the following parents:—Nelsoni × Macowani; pauciflora × Macowani; breviflora × pauciflora; tricolor × Nelsoni; modesta × citrina; Macowani × citrina; modesta × Lemon Queen ×. The seedlings are pretty border plants with refined inflorescences more resembling K. Nelsoni and K. Macowani in habit, but flowering from May onwards, starting with the pauciflora hybrids, which have quaint pendulous Lachenalia-like inflorescences in various colours; the others carry the display onwards till the taller Kniphofias show spikes.

Singularly, the pauciflora ♀—Macowani ♂ seedlings are all typical K. rufa, whilst Macowani ♀—pauciflora ♂ seedlings are very varied and of K. Nelsoni habit, the colours embrace all shades of yellow and coral. Breviflora ♂ × pauciflora ♀ yield pendulous flowers mainly. *G. B. Mallett.*

NOTICES OF BOOKS.

"The Book of Cut Flowers."—A Complete Guide to the Preserving, Preparing, and Arranging of Flowers for Decorative Purposes. By R. P. Brotherston. With preface by J. Martin White. [Published by T. N. Foulis.]

This work is written in simple readable style, being thus equally acceptable either to the employer who keeps his gardener, the gardener himself, his assistants, or to the amateur. Including the preface, the book contains 316 pages. It is freely illustrated, and includes in its earlier chapters a few examples of decorative art in the 17th century, and later, up to the 19th century, dealing also with the methods and styles adopted by the Japanese. From these latter highly artistic people we may all learn something to our own advantage. Examples of free arrangements are given, some of which are good, notably a bowl of China Roses, and one of Chrysanthemums, Michaelmas Daisies, etc.; whilst some are not so good by reason of the mixed arrangements. These are, we think, too freely illustrated. From these latter, however, one may learn what to avoid. Examples of suitable vases and glasses are illustrated, and due prominence is given to those of glass, than which, all points considered, there is nothing better either from the point of effect when complete, or of utility and simplicity in the arrangement. One of the illustrations—that of a bouquet—shows the flowers of a Cattleya upside down, an error that any critical observer may see perpetrated by inspecting the arrangements set up in florists' windows, and even in our leading exhibitions. By carefully inspecting some of the illustrations one may see the evil of overcrowding clearly defined; also the bad effects of bringing together flowers and foliage of incongruous detail, showing a want of harmony. Simplicity in the arrangement of cut flowers prevails more perhaps at the present day than it has ever done. Of this fact scarcely enough is made in the illustrations.

The text embraces floral arrangements in the widest sense, both for home uses and in churches. In the retrospect, note is made of the "decking of chimnies with moss, flowers, and pot-plants in 1600." The author also states that "Flower services in church for children were instituted by the Rev. Mr. Whitmill, who held the first in 1853." This commendable practice does not appear to have been generally adopted until later years, but it is now a frequent custom. When treating of the relative value of flowers (chap. 2) the author does well in commending those of a so-termed commoner nature. He says: "Common flowers, however, possess a beauty of their own, and it is conceivable that the person who has the capacity to display common flowers to advantage places them on a plane equal with flowers intrinsically of more value, but arranged less artistically. Moreover, it is well to disabuse our minds of the feeling that the exotic vegetation of our hot-houses is merely, on account of its rarity, to be preferred to flowers that are hardy in our climate." He could not have written truer words than these. Would that some of our gardeners, and others too, would place more value on "common flowers," and less upon the choicer exotics.

Upon the subject of fashion the author adds in pertinent words, "Unlike the Chinese and the Japanese, whose floral tastes reached, centuries ago, a high development, which has never since changed, ours is constantly in a state of flux." Extravagances are justly condemned, in support of which the methods adopted by the Japanese are quoted. Warning is given against the too free use of flowers that emit a fragrance, such as Liliums, for however agreeable they may be in the open air they are not in rooms or apartments so commendable. The practical experience of the author is exemplified in his notes upon the time of gathering flowers, cutting whilst still young, placing in water before packing, preparing for large supplies, etc., and packing for transit. The use of waxed paper for packing, however, does not appear to have been noted. The decorations of rooms, environment, colours of paper, and detailed ornamentations are dwelt upon in a common sense manner. One recommendation we cannot, however, agree with, viz., to first place the flowers in a vase, then add the foliage afterwards. After years of experience we prefer the opposite method both for economy and effect. Choice of colours is treated upon in a practical and suggestive manner, but upon this point there will always be some divergence of opinion. Upon such adjuncts as "coloured silks, chiffons and be-ribboned tables," the remarks are pertinent, and rightly so, "not calling for remark here."

Church decorations are separately treated upon in a short but comprehensive chapter. Personal adornment is considered in a similar fashion. Speaking of bouquets, the author says quite correctly: "The bouquet of the florist is so entirely artificial that all would hail with pleasure a return to the simple posy or nosegay." In like manner the decorations of graves, the uses of wreaths, etc., are described in a rational way. Chapters are devoted also to suitable flowers such as annuals, biennials, and hardy perennials, tuberous-rooted plants, etc. The uses of Orchids are treated upon; so also are everlasting flowers and grasses. Japanese methods are considered in detail, and this chapter affords some interesting reading. Literature dealing with floral decorations concludes what may be fairly described as a well considered and carefully written work, which may be confidently recommended as an addition to a gardener's library. The book can be obtained from our publishing department.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Miltonia vexillaria grows rapidly at the present season, and the young roots are very active. Those plants that were repotted into small pots last August should now be shifted into pots of a larger size. When repotting do not disturb the roots or the compost more than is unavoidable. Afford plenty of drainage materials and a shallow compost which should consist of one half sphagnum-moss, one quarter fibrous peat, and one quarter leaf soil, mixing with the compost some small crocks and coarse sand. Place plenty of living heads of moss on the surface of the compost, and subsequently afford enough water to keep these in a growing condition. Stand the plants well up to the light at the cooler part of the intermediate house, and where plenty of fresh air can be afforded when practicable. If kept for long together in a close atmosphere, the leaves are apt to decay at their points and the plants become unsightly. Black spot will sometimes appear on the young leaves if the plants are wet and the atmospheric temperature of the house falls a few degrees below the average. Examine the young growths several times each week, as occasionally some of the leaves stick together so firmly as to check the youngest leaves and cause them to crinkle. These should be liberated by passing a thin piece of smooth wood or the handle of a budding knife between them, and at the same time carefully liberate any flower spikes that may have become fixed in the axils of the leaves. These cultural remarks apply also to M. Bleuana and its distinct variety—nobilor. M. Endresii having passed out of flower should be kept rather on the dry side until growth has re-commenced. M. Phalænopsis, now growing freely, should be well supplied with water at the root. A moderately light position near to the roof glass of the Mexican house will suit its requirements admirably. Unlike its congeneric species, M. vexillaria, it prefers a small space to root into, and the plant may be repotted now if repotting is found to be necessary.

Odontoglossums.—In the cool house there are many plants of O. crispum and various other kinds that are now producing their flower spikes. These should be tied, or looped up to neat sticks. It is not advisable to tie them up straight, but to arrange them so that when in bloom the spikes will have an arching appearance. Slugs are sometimes troublesome at this season, and valuable plants of rare species and hybrids should have their young succulent spikes protected by a ring of dry cotton wool. Some of the smaller plants may be suspended to the rafters of the house, and large specimen plants may be elevated on inverted pots that are standing in pans of water. These latter precautions are sometimes of little use if slugs have been introduced with the sphagnum-moss used for potting, as they are often found lurking in the compost for several months after the plants have been repotted or top-dressed. No trouble should be spared to banish these pests from the house; baits of potato, young lettuce leaves, cabbage leaves, etc., are always useful for this purpose. The same remarks are applicable to such species as Oncidium macranthum, O lamelligerum, O. serratum, O. Loxense, O. monachicum, O. tetracopis, O. zebrinum, and others of that section. Nearly all of these plants are now showing new roots, and if slugs are about they will soon be destroyed if not carefully protected. Any of these Oncidiums that require to be repotted should be attended to at once. They prefer rather large pots for their roots to ramble in, and they will root freely in a compost of peat and sphagnum-moss in equal parts, adding a little leaf soil and some broken crocks. Those plants that have their flower spikes already well advanced should not be disturbed by repotting, but if the old compost has become sour and decomposed it may be carefully picked out down to the drainage, and fresh material substituted for it. Stand the plants in the coolest part of the Odontoglossum house, and where the atmosphere is very moist. Syringe well between the pots several times each day when the weather is bright and warm. They all delight in a free circulation of air at all times. Oncidium Marshallianum is now sending forth both roots and strong flower spikes. This plant should be grown in the same house, but if possible it should be placed in a drier position, though plenty of root moisture is necessary until the flowers expand, when the quantity should be considerably reduced. Plants of O. varicosum that have just passed out of bloom should be placed alongside the last-named species; they will require but limited supplies of water at the root until growth recommences. O. ampliatum majus will now be sending up flower spikes, and the plants should be placed in a shady part of the warm house, and water afforded often enough to keep the roots moist. Plants of O. Cavendishianum that have their spikes well advanced should also be placed in the East Indian house until the flowers open, when they may be returned to the intermediate house.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Palms always take a leading part as decorative subjects. Any plants that require to be repotted should now be attended to. If treated skilfully, Palms may be kept of a useful size for many years without being disturbed at the roots by repotting, provided the drainage is kept in good order. The common error made in the cultivation of these plants is that of over-potting. As a rule Palms grow under ordinary circumstances so easily that one is apt to treat them carelessly in the matter of affording water; being free rooting subjects there is little left in the pots but roots after they have occupied the pots for some time. Any inattention to supply a sufficient amount of water to a plant under such conditions would cause a check and the leaves to assume a yellow and sickly appearance, thus destroying the health of the plant. A good compost that will last for a long period is one composed of good fibrous loam three parts, peat or good leaf soil one part, some coarse bone meal, and coarse sand. The best fertiliser for Palms I find to be liquid manure and soot water, and occasionally nitrate of soda at the strength of 2 oz. to a gallon of water. Spray the plants once a week with a solution of soft soap and nicotine to keep them free from scale insects.

Hanging Baskets, containing Asparagus Sprengeri and other varieties of Asparagus, will need to have the material in which the plants are growing renewed. If it is necessary to increase the stock this can be done by division. By this early attention the baskets will become furnished with young growing shoots early in the season. A few ripe seeds of A. Sprengeri may be sown, and any young plants raised from last year's sowing will, if put in baskets, make very useful material for cutting from in the autumn and winter months. The durability of the fronds when cut is a sufficient reason for growing this plant in large quantities. The baskets should be lined with moss to give them a neat appearance. Asparagus deflexus and A. decumbens are two very useful varieties in addition to that named above. A humid atmosphere, free use of the syringe to keep red spider in check, a very porous compost for the roots, and liberal feeding, are details necessary to success.

General Remarks.—Take notice of your plants from day to day. Keep in mind the treatment to which you have subjected them; note the slightest change in their appearance, and the cause of the same. You will then have made a start in the right direction, for the man who errs and recognises the true cause of his failure has learned something, but he who attributes his failure to the wrong cause has not. By constant observation one may soon learn to judge a plant by its appearance, and after a time become sufficiently expert to be able to tell at a glance to what treatment a plant has been subjected, whether too warm or too cold, too wet or too dry, or just right, and be guided accordingly. Observe the appearance of plants in perfect health, strive to keep them in this condition, and never be satisfied until you can do so. Persevere and you will achieve success in the end.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Plum Trees in Pots.—It is not convenient to every grower to have one or two houses entirely set apart for the cultivation of permanent trees planted in borders. Therefore a few early fruiting varieties in pots may be brought on gradually in any unheated structure, such as the latest Peach-house, if frost can be excluded. The present is a good time to introduce a few trees which will yield ripe fruits before there are any ripe out of doors. Plenty of air must be admitted during the day and night on all favourable occasions. When the trees are in flower the blooms will need to be pollinated every day by means of a camel's-hair brush or rabbit's tail until the small fruits are seen to have formed. Syringing should afterwards be recommenced and carried out twice each day. If any aphis are seen notwithstanding these syringings, the most effectual method to employ against them is that of vaporising with the XL-all compound. The trees should not be allowed to become dry at their roots at any time. When the "stoning" period is past, the atmospheric temperature of the house may be increased with safety, and the trees be given a weak application of liquid manure twice each week. A few varieties specially adapted for pot culture are Purple Gage, Transparent Gage, Washington, Bryanston Gage, Coe's Golden Drop, and Jefferson.

In order to force Plums in pots successfully it is important to have the trees well established beforehand.

Queen Pineapples.—If a batch of suckers were rooted last summer, preparations should now be made for affording them a shift into 10in. or 12in. pots, according to the extent each plant is furnished with roots. The compost most suitable to promote the growth of these plants is one of good turfy loam with the fine soil riddled out of it, adding about 3lb. of half-inch bones and a liberal quantity of soot to each barrowload of soil. If a little charcoal be broken up and mixed with the soil it will be all the better. Use clean pots, and provide them with perfect means of drainage. Make the soil firm with the rammer as the work of potting proceeds. A hot-bed should be in readiness for receiving the plants, the hot-bed being of the temperature of 85 to 90 degrees. Now that the sun-heat is becoming stronger and the days are lengthening, attention must be given to plants that require to be repotted, so that they may have a full season of growth. They will not require much water at their roots for some time after being disturbed and until the roots get established in the new compost. Use the syringe freely amongst the plants.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth,
St. Fagan's Castle, Glamorganshire.

Dahlias.—For producing autumn effect in the borders, or for massing in isolated beds, the Dahlias—especially some varieties of the Cactus and pompon sections—are almost indispensable. Combining stateliness of growth with a wealth and beauty of exquisitely varied colour, they never fail to attract attention in the brightest of gardens. Easily propagated, there is little real difficulty in their culture, as unlike many of our best flowering plants, the Dahlia enjoys a remarkable immunity from disease of any sort. Neither mildew nor, in fact, any of the fungus scourges appears to affect it. It is true that in common with most herbaceous plants it is liable to suffer from attacks of snails and slugs, and also from earwigs, which ruin the growing points of the young shoots, and later attack the flower buds, but these excepted, the plant, practically speaking, is exempt from enemies. As the stem and growths of the Dahlia are succulent and brittle, precautions to prevent their being broken by violent winds must be taken—conjointly with proper staking—by growing them in sheltered positions. In the herbaceous borders, shelter to a great extent exists always, but in selecting the beds in which they are going to be grown by themselves it is important that the matter be borne in mind. The ground should be prepared at once. The position they are to occupy in the border should be determined, and holes 18 inches deep dug out according to the number it is intended to plant. Manure should be placed at the bottom and the hole refilled, taking care to keep the manure sufficiently deep to allow of the future planting being done, without the roots at once coming into actual contact with it. Prior to refilling the holes, strong stakes should be placed in position in the centre of each, so that when planting time arrives there should be nothing to prevent the work being done easily and expeditiously. The distance to be allowed between the holes will depend upon the variety of Dahlia it is intended to use in the particular position, but let each plant have ample room to develop. Beds, or ground that will be devoted entirely to Dahlias, should be trenched through, and if the soil is poor let a liberal amount of manure be added. In the back of herbaceous borders, and in large beds by themselves, the best of the bedding varieties in the Cactus section are effective. To furnish the fronts of borders, or small beds, varieties of the dwarf pompon section are especially adapted. Of bedding varieties in the Cactus section the following are amongst the best: Coronation, Floradora, the Queen, Britannia, Charm, Eva, Florence M. Stredwick, J. H. Jackson, Harbour Lights, Mabel Tulloch, Mary, Mrs. Ed. Mawley, Mrs. Winstanley, Sirius, and Vivia; and in the pompon section: Early Sunrise, Nerissa, Bacchus, Buttercup, Darkest of All, Guiding Star, and Phœbe.

Propagation.—The tubers should now be removed from their winter quarters, and placed in a mild bottom heat, covering them with loose leaf-mould but leaving the crowns exposed. Gentle syringing overhead to induce growth is all the moisture requisite. In the course of a week or so, which is quite early enough, there will be a number of growths ready from which to make cuttings. These should be taken with a small portion of the tuber attached, and inserted singly in sandy soil in small pots, and placed in bottom heat to make roots. When rooted they should be rapidly hardened off as far as atmospheric temperature is concerned. The young plants should not be left too long in the small pots in which they were "struck," but as soon as they appear to be rooting freely, let them be transferred to pots 5 inches in diameter, using a compost consisting of two parts loam and one part leaf-mould. In these pots they should, if practicable, be again plunged over a slight bottom heat, but in a cool atmosphere. By the beginning of May they will be ready for removing to cold frames, where every attention must be given to them in respect to ventilation and watering, and care taken to protect them from injury by late frosts.

The proper time to plant them out will depend upon the locality, but it is never wise to undertake this until the weather is warm enough to allow the plants to continue growing without the risk of a check. Dahlias from cuttings are much to be preferred to plants obtained by dividing up the old tubers, as they are not only better plants, but they have also the advantage that in the early summer when in pots they require much less room than the others.

Raising Seedlings.—This mode of propagation is only to be recommended for obtaining new varieties, and not for ordinary garden-decoration. If the seed is sown at the present time the seedlings will grow freely and quickly, and form good flowering plants by the autumn. The seed can be sown in shallow boxes or pans in ordinary light compost, covering them merely with a sprinkling of fine soil, and placed in heat. When the plants are up, they must be potted carefully into small pots and kept near to the glass. Their after care is similar to that already described for plants grown from cuttings.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder,
Bart., Leonardslee, Sussex.

Peach and Nectarine Trees.—The principal point in training the peach is to obtain an equal distribution of vigour amongst all the branches, so that there will be an equal flow of sap over all the tree. Assuming the trees were partially pruned late last summer, very little cutting will be required at the present time beyond shortening some of the long branches and cutting weak ones out or to a fruit bud at the base. As much old wood as can be spared should be taken away, as Peach trees bear on shoots made last year. Nail up the centre branch perfectly straight, using soft twine for this and other large branches. Train the two bottom branches right and left nearly horizontally, and let the others radiate at their different angles until a perfect fan-shape is obtained. The shoots should not be placed closer together than four to six inches. One of the essential points in Peach-growing is to allow plenty of room for the young growths that they may be enabled to mature thoroughly. Of young maiden trees, the shoots need to be pruned back half their length. Shoots will get up the wall soon enough, and if these are allowed to do so prematurely the tree will be ruined, it being essential to have a good base. Do not allow such trees to ripen any fruits during the first season after planting. Established trees that were lifted early in the autumn are of a different nature, and may bear a moderate crop; but should the tree show any signs of debility after starting into active growth do not neglect to remove the fruits. Assuming the walls have been given the necessary cleansing, the trees, after pruning and training has been done, should be sprayed with petroleum emulsion, the fumes of which will be effective in helping to prevent an attack of aphis when the trees are in blossom. Clear the surface of the ground of all rubbish and make it of tidy appearance. The following varieties of Peaches generally succeed well and ripen over a long period:—Waterloo, Amsden June, Hale's Early, Early Alfred, Early Silver, Noblesse, Royal George, Barrington, Sea Eagle, and Dymond. Nectarines: Lord Napier, Cardinal, Early Rivers, Victoria, and Pine Apple. The protection afforded these trees in spring varies in different localities. I do not advise the use of heavy coverings at any time; the coverings, whatever they may be, should not be of a dark, permanent nature, such as spruce branches. Have some means or other in readiness to protect the bloom at the right moment.

Stocks for Fruit Trees.—Let these be cut back for grafting, and retard scions by placing them in ashes under a north wall.

Affording Stakes.—Newly-planted trees that require support should be attended to at once, or the prevailing winds of March may sway them about and hinder root action.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of
Portland, Welbeck Abbey, Notts.

Parsnips.—The end of the present month will be a good time to sow the main crop of Parsnips. The seeds require a long time in which to germinate, but are quite hardy, and a moderate frost seems to have but very little effect on the young plants. Parsnips need deep soil in order that the roots may penetrate easily and continue straight. If obstructions are present through the ground being untrenched, the crop will be materially lessened and forked growths will result. Select a piece of fairly rich ground, but do not add any green manure; merely make an application of wood ashes or of refuse from the burning heap which is a common feature in most gardens. The soil should be trenched to the depth of 3 feet, and the mould finely broken up. Sow the seeds in drills at distances of 2 feet apart, and later on the seedlings may be thinned out to 1 foot apart in the lines. It is seldom that the finest exhibition Parsnips can be had from the ordinary method of culture because of the little obstructions in the way of small stones, etc. For such a purpose it is necessary to make holes with an iron bar quite a foot deeper than you expect the root to grow. These holes may be made 6 inches wide and filled in with finely sifted soil, adding a little soot to help to prevent insect attacks. Then the seed can be sown, and later the seedings be thinned out to one plant in each hole. These long roots are often the subject of comment when seen at exhibitions, and the length of the tap root is objected to, but in defence of them it may be said that one straight root affords far finer texture of flesh than is obtained from an accumulation of several: therefore the quality of the edible part is higher in the long roots. For shallow soils where no trenching is possible, there is a stump rooted variety of Parsnip on the market which should be sown, but otherwise Hollow Crown is a fine main crop variety. Sutton's Tender and True, and Dobbie's Selected are improvements because of their whiter skins, and which are also much smoother.

Main Crop Potatos.—Preparations should now be made for this, the most important crop of the kitchen garden. Although at present it is too early to plant by three weeks, the soil should be fully prepared by being dug over, and as far as possible exposed to the morning frosts. Assuming that the ground was trenched in the autumn, the soil should now be thoroughly broken over with the fork, incorporating with it at the same time a dressing of lime or wood ashes to sweeten the surface, and increase the weight and table quality of the crop. Make no attempt to prepare the soil in wet weather, but wait until the return of a drying wind and sunshine. The seed tubers should now be finally prepared by having their sprouts reduced to one, or at the most two, on each tuber.

Earlier Potatos.—The advancing crops in frames or in pots will require to be top-dressed or earthed-up when they have reached the height of 9 inches, and as the sun advances in power so must more air be admitted to the frame, otherwise the haulm will soon become leggy and tumble over.

Peas.—Such varieties as Early Giant, Duke of Albany, and Alderman may now be freely sown. When shelled these varieties yield a splendid return, and are of the best quality when cooked. Another variety, which is a prodigious cropper—Senator, a variety raised by Messrs. Webb at Wordsley—is worthy of much attention, whilst Edwin Beckett and the new one named Quite Content should not be overlooked by cultivators for exhibition.

French Beans.—A sowing should be made in small pots with a view to planting them in frames when the Potato crop is cleared out later on.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents. *The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers. *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR MARCH.

THURSDAY,	Mar. 1	Linnean Soc. meet.
SATURDAY,	Mar. 3	Ann. meet. Wakefield Paxton Soc. Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.
TUESDAY,	Mar. 6	Roy. Hort. Soc. Coms. meet. Nat. Amateur Gard. Assoc. meet. Complimentary Dinner to Mr. W. Marshall, at Hotel Windsor, Westminster.
SATURDAY,	Mar. 10	Dutch Gard. Soc. meet.
MONDAY,	Mar. 12	Ann. meet. Unit. Hort. Ben. & Prov. Soc., 8 p.m., at the Roy. Hort. Hall, Westminster.
THURSDAY,	Mar. 15	Linnean Soc. meet.
TUESDAY,	Mar. 20	Roy. Hort. Soc. Coms. meet.
WEDNESDAY,	Mar. 21	Roy. Bot. Soc. Show, Regent's Park.
THURSDAY,	Mar. 22	Roy. Hort. Soc. Exh. of Colonial-grown fruit (3 days).
WEDNESDAY,	Mar. 28	Liverpool Spring Hort. Show (2 days).
THURSDAY,	Mar. 29	Torquay Gard. Soc. Show.
FRIDAY,	Mar. 30	Roy. Bot. Soc. meet.
SATURDAY,	Mar. 31	Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—40·2°.

ACTUAL TEMPERATURES:—

LONDON *Wednesday, Feb.* 21 (6 P.M.): Max. 45°; Min. 30°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 22 (10 A.M.): Bar., 30.1; Temp., 41°; *Weather*—Fair, with occasional sunshine.

PROVINCES *Wednesday, Feb.* 21 (6 P.M.): Max. 45° Ireland, South; Min. 37° N.E. Scotland.

SALES.

MONDAY NEXT—

Herbaceous plants, Hardy bulbs, Lilies, Roses, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—

Hardy border and herbaceous plants, Lilies, Begonias, &c., at 12; Roses, Azaleas, &c., at 1 and 3, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

Sale of Roses, Azaleas, Liliums, &c., at Stevens' Rooms, King Street, Covent Garden, London.

THURSDAY NEXT—

Double-fronted Freehold House and Building Land, Six Greenhouses, Stock, Household Furniture, &c., in lots at the Exotic Nurseries, Hermitage Road, Coalville, Leicestershire, at 2, by Protheroe & Morris and H. M. Bertenshaw.

FRIDAY NEXT—

Hardy border plants and perennials, Lilies, Roses, Azaleas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

Imported and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Law of Inheritance. WE are frequently asked for information concerning the so-called Mendelian law, which is so important as regards the practice of cross-breeding, whether of animals or of plants. The subject is too intricate for satisfactory treatment in the course of an article, consequently for the fullest details we must refer the enquirer to Mr. Bateson's *Principles of Heredity*, published by C. J. Clay and Sons. Less easily obtained is Mr. Bateson's address before the Cambridge meeting of the British Association (Zoological Section), 1904. An admirable summary, but one we fear even more difficult to procure, is contained in a lecture delivered by Mr. C. C. Hurst before the Leicester Literary and Philosophical Society in 1904. A translation by Mr. Druery of Mendel's original paper was printed in the *Journal* of the Royal Horticultural Society, and is incorporated with Mr. Bateson's volume just mentioned.

The terminology and the algebraical formulæ made use of by some writers are, of course, essential to the student, but they prove embarrassing to the reader who only desires to secure a grasp of the general principles involved.

Gardeners and hybridists are familiar with plants that breed "true," i.e., in which a particular character, or characters, becomes "fixed," and with others which cannot be depended on to breed true, but yield a mixed offspring. Whether apparently "true" or "mixed," the offspring always contain, in varying degree, certain features or characters derived from their parents. These "characters" are either apparent—that is, "dominant"—or latent—that is to say "recessive." Where they are dominant we get, so far as those particular characters are concerned, "thoroughbreds" or pure offspring. Where they are mixed we get the heretofore "recessive" or latent characters manifesting themselves in varying degree. This predominance of certain characters and this latency of others are found, when carefully investigated, to manifest themselves in accordance with certain definite numerical proportions, such as 3:1. Each "gamete"—that is to say, each individual plant or animal—is, as we have said, made up of certain characteristics which are associated together, but which, whilst on the one hand they never truly blend or mix any more than cards do when shuffled, yet on the other hand frequently become more or less dissociated or "segregated," and thus give rise to variations or sports. The "gamete," according to Mendelian views, is made up of pairs of contrasted characters; for instance, in the case of the Pea, of smooth or wrinkled seeds, as well as of many other similar contrasts. Of these contrasted characters one is found, as we have said, to be numerically dominant—the other recessive. If the "gamete" is pure the plants will breed true. If the "gamete" is impure or mixed, the dominance is upset and the offspring becomes varied. It is not only the seeds that vary in this way, but many other parts of the plant are seen to present contrasted characters which behave in like manner. To avoid complication, however, one pair of characters is studied at a time, though it is obvious that to get at trustworthy results all must eventually be studied and compared one with the other in the same way, so as to get at the sum total of resemblances or differences.

The occasional appearance of purple Sweet Peas when two white-flowered varieties have been crossed, or of purple-flowered Stocks with hoary leaves, raised from plants with white and cream-coloured flowers and glabrous leaves, as explained by Mr. Bateson, is due to reversion.

Reversion itself is described as a "simple and orderly phenomenon," the explanation of which as given is, however, too abstruse to be made readily intelligible in this place. It will be interesting to Sweet Pea raisers to know that not only are there colour-variations in the flower, but also co-relative differences in the size and shape of the pollen-grains, which may account for some of the phenomena witnessed in the breeding of Sweet Peas.

Other workers have attacked the solution of these problems from different quarters—Mr. Bateson himself, by practical experiments with poultry and with insects, as well as with Primroses and other flowers. Mr. Hurst has investigated the phenomena in rabbits and mice as well as in Orchids. Quite lately he has communicated to the Royal Society a paper in which he shows, from an examination of the Stud Book, that the inheritance of coat-colour in thoroughbred horses is in accordance with Mendelian principles. The Stud Book contains fairly complete records of the age, colour, sex and parentage of British thoroughbreds from the earliest accounts down to the end of 1904. A critical examination of these records shows that bay and brown colours are "dominant" and chestnut "recessive." Thus from the union of several pure bay and brown sires with numerous chestnut mares, 370 foals were produced, all of which were bays or browns. The sires were themselves, in all but one instance, the offspring of bay or brown parents or grandparents. In other cases, wherein the bay or brown sires were "impure" (that is, less markedly dominant as to inheritance of colour), and were mated with chestnut mares, then the offspring numbered 702 foals, of which 355 were bays and 347 chestnuts.

The general results go to show that, contrary to the opinion of Prof. Pearson, the inheritance of particular colours in horses is subject to definite numerical laws, as pointed out originally by Mendel in the case of Peas.

The matters treated of are naturally of great importance to breeders and raisers, so that we look forward with much interest to the publication of the Orchid Stud Book, which cannot fail to throw light on this obscure subject, and to suggest further matters for enquiry. The subject will also naturally come under consideration at the Hybridisation Conference on July 30th-31st.

HORTICULTURAL EXHIBITIONS AT BIRMINGHAM. Many of our readers are aware that several important exhibitions, including those of the Midland Daffodil and Carnation Societies, are held each year in the Botanical Gardens, Edgbaston, Birmingham. With a view to the promoting of further exhibitions in those gardens, which are admirably suited for such a purpose, the committee of the Birmingham Botanical and Horticultural Society has sent a circular to exhibitors and prominent horticulturists in the Midland Counties asking for their support. We make the following extracts from the circular:—

"DEAR SIR,—Owing to the increased interest now shown in the pursuit of gardening in the Midland Counties, the Birmingham Botanical and Horticultural Society has considered a proposal to hold monthly flower shows in the Botanical Gardens, Edgbaston, during the Summer months. The Daffodil and Auricula Shows, held at the Gardens in April, the Carnation Show in August, and the exhibition of Border Chrysanthemums and other Autumn flowers, held under the auspices of the Gardeners' Mutual Improvement Association, are well supported by exhibitors and visitors. It is now proposed (as an experiment) to hold two extra Shows during the coming Summer—one in June and the other in July. It is proposed to award medals to meritorious exhibits, and certificates to individual plants, etc., of superior excellence. A meeting to consider the project and to elect representatives of intending exhibitors and supporters to serve on a sub-committee to deal with the arrangements, fix dates of Shows, etc., will be held at the Botanical Gardens, Edgbaston, on Thursday, March 1, at 5.30 p.m. Neville Chamberlain, Esq. (hon. treasurer of the society), in the chair.—Thos. Humphreys and W. H. Whitelock, hon. secs."

We trust that the movement will meet with support, and that Birmingham may become a centre of greatly increased horticultural activity.

"Flora and Sylva."—The third volume of this elegant publication is before us, and in paper, typography, and illustrations is equal to its predecessors, which is about as high praise as can be bestowed. The present volume has a painful significance, inasmuch as it contains some of the last—and, we may add, some of the best—work of the late H. G. Moon. The volume is dedicated to his memory, and there is at p. 346 an appreciative account of his life and works. The figure at p. 62, taken from Loudon's Arboretum, p. 2,075, is by some mischance stated to represent the "Buckland Yew, recently destroyed." The Buckland Yew is, or was till lately, flourishing exceedingly in spite of its transportation. In a notice prefixed to the December number we are informed that *Flora and Sylva* will henceforth be published in the form of a yearly volume.

The President of the Royal Horticultural Society.—Sir Trevor Lawrence completes this month the 21st year of his presidency of the Royal Horticultural Society. The council has resolved to have his portrait painted to place in the society's new building, and also to establish in perpetuity a large gold medal to be called the "Lawrencean Medal," to be awarded to exhibits of a specially deserving character at the society's meetings. *Times.*

Surveyors' Institution.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, February 26, 1906, at 8 p.m., when a paper by the late Mr. John Leaning, entitled "The Assimilation of the Practice of Quantity Surveyors," will be read by Mr. H. J. Leaning (Fellow).

Royal Gardeners' Orphan Fund.—A concert under the patronage of Lord and Lady Belper was held in the Kingston-on-Soar Reading Room on Friday, 16th inst., in aid of this excellent charity. The Rector, the Rev. H. B. Hamilton, occupied the chair, and a large and appreciative company was present. The concert resulted in a profit of £6 10s.

Garden Pots.—We have received from the Scremerston Coal Co., Ltd., Berwick-on-Tweed, two flower pots, with an indication of the size of each stamped into the clay at the base. This information may be of value in some gardens, for it can hardly be denied that, owing to the practice of describing pots as of so many inches in diameter at one time, and at other times as of so many to the "cast," some confusion has arisen. It may be remarked that the diameter of the pot before us marked 3½ inches is at least one-eighth of an inch in excess of the marked measurement, and the other marked 3 inches is equally above the standard. The pots are exceedingly well made, and of good material, their smooth finish being very praiseworthy. The base is slightly hollowed and grooved.

Name, Name!—Parkinson seems to have had a poor opinion of the honesty of the nurseryman of his day. Speaking in the *Paradisus* of the "Arch-Duke Cherrie" he says, "Scarce one of twentie of our Nurserie men doe sell the right but give one for another; for it is an inherent qualitie almost hereditarie with most of them to sell any man an ordinary fruit for whatsoever fruit he shall aske for: so little are they to be trusted. . . . The true Gascoign Cherry is known but to a few; for our Nurserymen do so change the names of most fruits they sell, that they deliver but very few true names to any." We are happy to think that there has been a great improvement in this respect, as nowadays no nurseryman with a reputation to lose would resort wilfully to such practices.

The Royal Horticultural Society's Committees.—Not many changes in the personnel of these bodies is seen in the lists of membership recently issued. The Council's policy now seems to be to retain, so far as possible, the experience of the old and efficient members. The Fruit Committee, the senior body, loses Sir Albert Rollit and Mr. Balderson as vice-chairmen, Mr. Joseph Cheal being the only new appointment to that position. New members are Mr. Allan, Hillingdon Court Gardens, Uxbridge; Mr. W. Barnes, Bearwood, Wokingham; Mr. J. Davis, Glebelands Gardens, Woodford; Mr. R. Lye, Sydmonton Court Gardens, Newbury; Mr. Jas. Vert, The Gardens, Audley End, Essex; and Mr. Charles Nix, Tilgate, Crawley. The first four, as will be seen, are gardeners, making of gardeners and ex-gardeners no fewer than 30, a material preponderance. The total membership now is 42, as is also that of the Floral Committee, the new members of which body are three—Mr. Jas. Douglas, V.M.H., Great Bookham, transferred from the Orchid Committee; Mr. A. R. Goodwin, Kidderminster; and Mr. R. C. R. Nevill, Chislehurst. The new additions to the Orchid Committee—the total membership of which is 39—are Major Holford's able grower Mr. Alexander, Mr. Briggs-Bury, Accrington; Mr. A. Dye, The Gardens, Tring Park; Mr. Leeman, Heaton Mersey; Mr. C. J. Lucas, Horsham, and Mr. F. M. Ogilvie, Oxford. The Narcissus Committee also number 39, and shows a few changes in its composition. The Scientific Committee, the largest body, has increased its membership from 76 to 81, one of the chief additions being Lieut.-Col. Prain, the new Director of Kew Gardens. This Committee does not, as a rule, show the largest attendance at its meetings, the members acting as referees when required. The total list of names on the five committees reaches 243, but allowing for a few duplicates it is thus seen that the Council calls to its aid this year, as members of these important bodies, no fewer than 230 Fellows, all of whom render gratuitous and willing service to horticulture and science.

Manuring of Potatos.—The Midland Agricultural and Dairy Institute publishes the following summary of the results of experiments made in Lincolnshire in 1905. 1. Where farmyard manure alone is applied to the Potato crop, moderately heavy dressings (up to 20 tons per acre) may profitably be given. 2. The largest profit was realised by Plot 4, where a small dressing of dung was supplemented with a moderate dressing of artificials, as follows: 10 tons farmyard manure, 2 cwts. nitrate of soda, 4 cwts. superphosphate, and 1½ cwts. sulphate of potash. 3. Artificials alone give considerable profit when applied in moderately large dressings, but are not so good as artificials and dung together. 4. The dressing of artificials only, which gave the best results, was the following (Plot 5): 1½ cwts. sulphate of ammonia, 4 cwts. superphosphate, 1½ cwts. sulphate of potash. 5. It pays better to supply nitrogen to the Potato crop in the form of sulphate of ammonia than as nitrate of soda. 6. Dissolved bones do not give such good results as when the same amount of phosphoric acid is applied in the form of superphosphate. 7. When equal amounts of potash are used, sulphate of potash has a more beneficial effect upon the potato crop than either muriate or kainit. 8. Very heavy dressings of artificials may give a heavier crop, but are not so profitable as moderately large applications, and are, therefore, not to be recommended.

"Pips."—Dr. Murray, in a recent number of *Notes and Queries*, seeks information as to the date of the first employment of the word "pips" to designate the seeds of Apples or Pears. He tells us that up to this time he has not found an instance of the use of the word in this sense earlier than the beginning of the 19th century. So familiar are we with "Pippins" that we not unnaturally thought "pips" would be contemporaneous with them. A search through *Parkinson's Paradisus* (1629), however, showed that in his time the seeds of Pippins, as well as other Apples, were called "kernels," a term we now confine to the seeds of stone fruit. In *Miller's Dictionary* (ed. 8, 1768), the word "pip" finds no place, the seeds being called as by Parkinson "kernels." It is interesting to note, with reference to seedless Apples, lately brought prominently under notice, that in *Parkinson's Theatrum* (1640) mention is made of a sort "which hath no kernels within the core." *Gerard ed. Johnson* (1636), *Evelyn Pomona*, p. 345 (1678), and *Grew Anatomy*, p. 40 (1682), all use the word kernel. Some of our readers who may have access to garden books of old times may be able to trace the early use of the word "pip" in the sense of seed, as well as in its application to one flower out of a cluster, as in the Auricula.

Country in Town.—The object of the Exhibition proposed to be opened in the Whitechapel Art Gallery during the summer of 1906 is to show East Londoners what can be done to bring into that neighbourhood something of the beauty, freshness, and inspiration of nature. The Exhibition will contain:—I. Living things: (*a*) Plants which have been grown in London. Plants which have been grown in London Schools. (*b*) Plants, suggested by experts, which might be grown in London. (*c*) Such plants fitted into models of windows, gardens, or roofs. (*d*) Aquaria, Vivaria, Beehives, &c. II. Pictures and Models; (*a*) Parks and Open Spaces. (*b*) Playgrounds. (*c*) Open-air Swimming Baths. (*d*) Children's Gardens in London and other cities. (*e*) Town Gardens. (*f*) London Back Gardens. (*g*) Foreign Towns, showing planting in the streets. (*h*) Garden Suburbs. (*i*) Country Cottages. (*j*) Railway Embankments and Stations. (*k*) London Trees. III. Materials and appliances: (*a*) Specimens of soils and suitable methods of planting for London. (*b*) Window Boxes. (*c*) Fern Cases. Flower Tables for Schools, &c. (*d*) Hives. (*e*) Nesting Boxes and methods of feeding wild birds. Prizes may be offered for Window Boxes *in situ* in crowded neighbourhoods, and for arrangements of cut flowers. Railway Companies will be asked to send photographs of suitable places to which town children could be taken, and to suggest comfortable and economic methods of conveying them. Nurserymen will be asked to make displays of flowers under I. (*b*). A Committee was formed last year, but not early enough to complete the preparations for an Exhibition in the summer of 1905. The Committee is being reconstructed, and in the meantime offers of co-operation and suggestions will be received by Canon and Mrs. Barnett, Toynbee Hall, Whitechapel, E.

Fruit Growers' Guide.—According to the title page, this little pamphlet is intended for growers not only of fruits, but of flowers, vegetables and Potatos, but it was not convenient to get all that information into a headline. The Guide is intended to assist growers, especially in the Wisbech district, in placing their produce to advantage in the populous towns of the north. The directions given are, however, so practical and so excellent that we commend the pamphlet to the notice of all who grow for market, wherever it may be. The recommendations made are not new, but they are so lucidly and tersely set forth that growers will have themselves only to blame if they do not, as far as circumstances permit, carry out the directions for picking, grading, and marketing their produce. It is issued by the Newcastle-on-Tyne Fruit and Potato Merchants' Association, of which Mr. T. Pringle, of Pringle's Buildings, St. Andrew's Street, Newcastle-on-Tyne (and elsewhere), is the Honorary Secretary.

FLORA OF TROPICAL AFRICA.—Another instalment of this important publication, edited by the late Director of the Royal Gardens, Kew, Sir W. T. THISELTON-DYER, has been just issued. It contains a detailed account of the Convolvulaceæ by Messrs. BAKER AND RENDLE, continued from a previous part, as well as the Solanaceæ by Mr. C. H. WRIGHT, and part of the Scrophulariaceæ by Mr. HEMSLEY and Mr. SKAN.

ILLUSTRATIONS OF PLANTS. — The garden of M. VAN DEN BOSSCHE, at Tirlemont, Belgium, continues to furnish illustrations and descriptions of new or interesting plants. In the *Icones Selectæ* are given representations of cultivated plants which have produced flowers in M. VAN DEN BOSSCHE's garden. These are enumerated in another column under "Plant Portraits." In another publication of a similar character, called *Plantæ novæ vel minus cognitæ*, M. DE WILDEMAN describes and figures several new plants collected in Mozambique by M. LUJA, and now preserved in the herbarium of M. VAN DEN BOSSCHE. The plants described by M. DE WILDEMAN are Ottelia latifolia, Asparagus Lujæ, Gladiolus affinis, Oxalis morrumbalensis, Triumfetta morrumbalana, Plectronia stipulata, and Pavetta appendiculata. The drawings by M. APREVAL are excellent, and the critical dissertations by M. DE WILDEMAN most instructive.

BORDEAUX MIXTURE AND THE POTATO DISEASE.—The Midland Agricultural and Dairy Institute have lately issued the result of some field trials carried out in Lincolnshire to determine the effect of Bordeaux mixture and solutions of sulphate of ammonia, respectively, in preventing the Potato disease. Summarising, the results may be stated as follows:—1. The application of Bordeaux mixture is effectual in reducing the amount of disease and increasing the yield, and results generally justify its application being recommended, provided the details of mixing, &c., are strictly attended to. 2. Three times spraying, at intervals, gives better results than either one or two applications. 3. Solutions of sulphate of ammonia are not to be recommended for the spraying of Potatos, for they increase the amount of disease, and reduce the crop to an alarming extent.

THE BEST MANURES FOR MANGELS.—Among the several bulletins useful to agriculturists issued by the Midland Agricultural and Dairy Institute is one on the manuring of Mangels. Field trials of various preparations were made during several years, and Mr. J. F. BLACKSHAW deduces the following conclusion:—That the following dressing per acre (in addition to farmyard manure) is what farmers should apply in order to get the most profitable crops of Mangels: Sulphate of ammonia (at seeding) 100 lb. (or such an amount as contains 20 lb. nitrogen). Nitrate of soda (at singling) 130 lb. (or such an amount as contains 20 lb. nitrogen). Superphosphate (at seeding) 715 lb. (or such an amount as contains 90 lb. phosphoric acid). Sulphate of potash (at seeding) 127½ lb. (or such an amount as contains 60 lb. potash). Common salt (at seeding) 280 lb.

THE SOUTH AFRICAN FORESTRY SCHOOL.—We learn that a South African School of Forestry is being established by the Government of Cape Colony for the scientific training of forest officers, and for research in South African forestry. The aim of the School is to provide a thorough course of instruction in forestry with special reference to South African conditions. According to the programme from which we quote, the Tokai arboretum, which now comprises the largest collection of timber trees in South Africa, affords unique opportunities for practical instruction in silviculture. To this will be added the pineries and sand-reclamation planting in the Cape Flats, together with the fine arboreta and forests at Ceres Road, comprising forest estates of 20,000 acres. Such instruments as are required for practical forest work, including plane tables, barometers, chains, dendrometers and calipers, will be provided. The course of training proposed covers a period of two years, preceded by a preliminary scientific course of one year, specially arranged for those students who are not qualified to enter the regular course. Further particulars can be obtained from the Chief Conservator of Forests, or from the Registrar, South African College, Cape Town.

LINNEAN SOCIETY.—At a meeting to be held on Thursday, March 1, at 8 p.m., the following papers will be read:—1, Dr. D. H. SCOTT, F.R.S., F.L.S., "On a new type of Stem from the Coal Measures." 2, Dr. H. C. TORBY, F.R.S., F.L.S., "Notes on Some Species of Nereis in the District of the Thames Estuary."

THE "JOURNAL OF THE JAPANESE HORTICULTURAL SOCIETY."—This publication has been in existence since 1889, and its New Year's volume for 1906 shows no falling off in size nor in illustrations. The letterpress, contributed by native authorities, is in Japanese, and includes articles on fruit-tree blossoms, a proposed Alpine garden in Shinano, and similar subjects. The pictures, black and white and coloured, are formed with a few effective strokes of the brush. Some of them show the results of increasing intercourse with Western nations.

NATIONAL FRUIT GROWERS' FEDERATION.—A meeting of the Council took place on Tuesday, the 20th inst., at the Royal Horticultural Hall, Westminster, Col. C. W. LONG, M.P., president of the Federation, in the chair. There were also present Messrs. F. S. W. CORNWALLIS, G. E. CHAMPION, E. VINSON, S. BOCRMAN, F. SMITH, A. H. H. MATTHEWS, W. IDIENS, C. H. HOOPER, T. WAGHORN, and A. T. MATTHEWS (secretary). Major A G. BOSCAWEN was appointed president elect in the room of Mr. CORNWALLIS, whose duties as president of the R.A.S.E. prevented him from retaining the office. Mr. T. WAGHORN, legal adviser to the Federation on railway matters, made important statements in connection with the claims of Kent growers for rebates due to them on large consignments, and it was decided to send a communication on the subject to all members. Mr. C. H. HOOPER's appointment as delegate to represent the Federation on the Joint Railway and Parliamentary Committee was confirmed, and that gentleman reported what was being done by that important body; including the drafting of a Bill to be introduced this Session dealing with the classification of goods, owners' risk rates, powers of the Boards of Trade and Agriculture on railway questions, &c., &c. The President called the attention of the Council to certain grievances affecting growers, in which they might take action, including the present mode of assessment for the Income Tax. He also pointed out that something might be done to simplify and improve the present system of taking valuations for outgoing fruit-farmers, by urging the adoption of certain recommendations of the Departmental Committee on Fruit Culture. The next meeting will be held on March 12 at 2 p.m.

AMERICAN CARNATIONS.—We are indebted to Mr. A. DIMMOCK for the opportunity of inspecting a bouquet of Carnations, the flowers having been cut in America and imported here in this condition. Mr. DIMMOCK has previously shown us Roses which have crossed the Atlantic in a cut state, and were brought to this office in a good state of preservation. The interest in the present instance lies in the fact that the Carnations are of a new variety named "Victory." The flowers are crimson coloured, of considerable size, moderately fragrant, and the petals are less fringed than American varieties are usually. Whether it is of better quality than some varieties which have already been imported of the same colour will have to be determined after cultivation here. In the meantime, we could not conceal our admiration for the excellent "grass" on the stout, wiry, perfectly rigid stems. Certainly, Carnation culture is practised with extraordinary success on "the other side."

LAW NOTES.

A SINGULAR ACTION.

A singular action affecting Rhubarb was lately heard at the Leeds District County Court, before his Honour Judge Greenhow. The plaintiffs, fruit brokers of Birmingham, claimed £50 from the defendant for damages to 2,500 roots of Rhubarb. It was stated that defendant used the ground adjacent to Rhubarb beds for sporting purposes. The plaintiffs claimed damages for nuisances alleged to have been committed by crowds of people who visited the defendant's grounds to see sporting events. Defendant had been in occupation of the field for some years. People got on to the plaintiffs' land and trampled down the roots. On August 9 last there was a race between a horse and a man for £100 a side, and other events, which drew a big crowd, and the crops of Rhubarb were much injured. During the race rain fell, and the Rhubarb was pulled up by the crowd, who used the leaves as umbrellas. Plaintiffs applied for an injunction.

His Honour said there was nothing objectionable in the sports themselves. The only possible charge that could be brought against the defendant was that he had presented such attractive sports that the crowds which gathered were uncontrollable. He held the crowds were not large or bad enough to constitute a nuisance, and therefore gave judgment for the defendant.

IN BANKRUPTCY.

At the London Bankruptcy Court, on February 16, before Mr. Registrar Brougham, an application was made for the discharge of Dick Edwards Radclyffe, described as an horticulturist and seedsman, lately carrying on business at Wraysbury, near Staines. The statement of affairs filed by the debtor disclosed liabilities amounting to £714, but, as a matter of fact, proofs of debt had been admitted for £1,715. The debtor returned his assets at nil, but £50 2s. 6d. had been realised, and a first and final dividend of 2½d. in the £ had been paid to the unsecured creditors. The debtor's failure appeared to have been caused through his embarking in enterprises of a speculative character without sufficient capital. Eventually the discharge was suspended for two years.

UROPHLYCTIS ALFALFAE,
A FUNGUS DISEASE OF LUCERNE, IN ENGLAND.

A FEW weeks ago some plants of Lucerne (*Medicago sativa*) were sent to the College from a farm near Herne Bay, Kent. The piece of Lucerne from which the plants were taken had been sown in the spring of 1899, and it was noticed during 1905 that many of the plants were beginning to die away. On examining the plants sent several superficial, warted, gall-like outgrowths, about three-quarters of an inch across, were found on the crown of the root. These "galls" proved on microscopic examination to be of fungus origin and due to the attacks of *Urothlyctis Alfalfae* (v. Lagerh. *olim*), P. Magn., a fungus not hitherto reported as occurring in England. The "galls," which consist of the hypertrophied tissue of the host-plant, were found on being cut across to contain a number of minute cavities or chambers filled with a crowded mass of brownish spores. These spores, which measure about 40 μ. in diameter, are the resting-spores of the fungus. From the appearance of the plants sent it was evident that they had been infested for some time, and the injuries caused by the fungus had induced the plants to throw out fresh or extended crowns. Some of the plants were almost killed. This piece of Lucerne has now been ploughed up.

The present disease was first observed (in 1892) in Ecuador, where it causes considerable loss in certain districts. It is not improbable that it occurs in other countries of South America. The fungus was observed to be most destructive to plants sown on damp ground, and in such spots many old fully-grown Lucerne plants were killed. In these cases "galls," much warted or coralloid externally and often reaching the size of a tolerably large Apple, had been formed in considerable numbers on the crown of the root. These "galls" closely resemble externally those found on the roots of Alder.*

In 1902 the disease was recorded from Colmar, in Alsace, Germany, where it occurred destructively on cultivated Lucerne. It is now reported as being not uncommon in Alsace and in certain localities in Switzerland, and it has quite lately been observed in Italy, where it has caused considerable damage to the Lucerne.

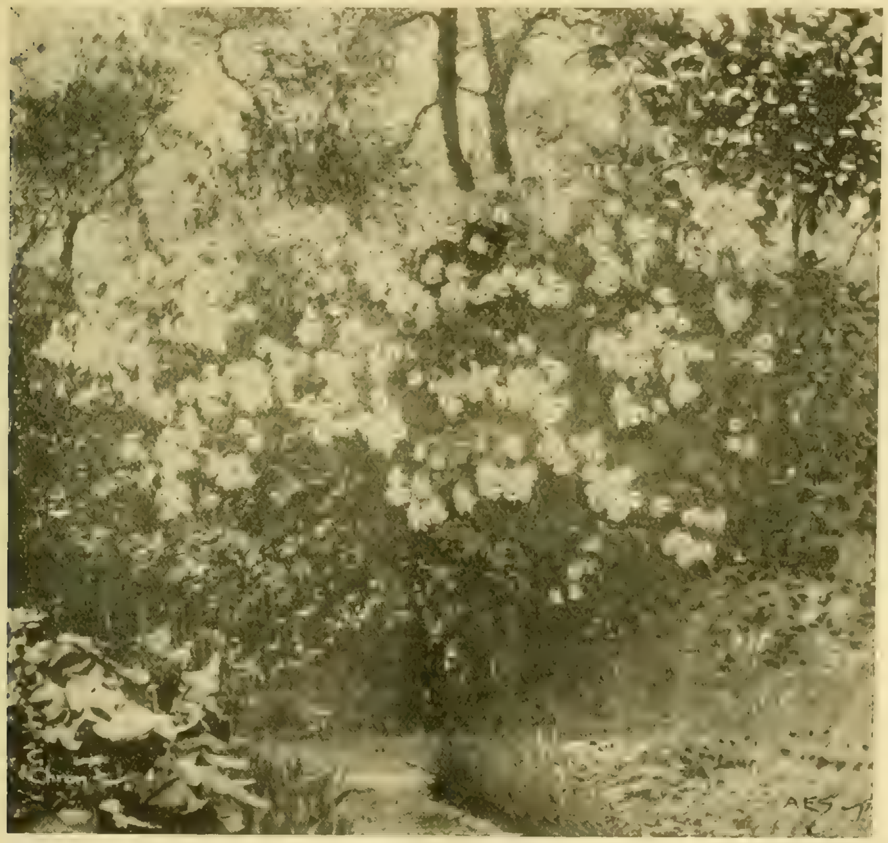


FIG. 48.—MONTANOA BIPINNATIFIDA FLOWERING AT BORDIGHERA.

A detailed account of the disease, with illustrations, will be given in the Journal of the Wye Agricultural College. One of the most important points in connection with the present disease is to ascertain whether the fungus can attack other cultivated crops, and investigations on these lines are being carried out in the botanical laboratory and experimental grounds of the College. I should be glad if anyone meeting with the present disease would kindly forward examples to me at the address given below. *Ernest S. Salmon, South Eastern Agricultural College, Wye, near Ashford, Kent.*

MONTANOA BIPINNATIFIDA.

This is a handsome shrubby Composite, native of Mexico, with boldly cut pinnate foliage and yellow flower-heads. In this country it is used as a "sub-tropical" on account of its handsome foliage, but where the summers are hotter the flower-heads are produced abundantly, as may be seen from our illustration taken from a photograph by Mr. D. E. Peto of a plant in the garden of Dr. Hubbard, Casa St. Monica, Bordighera.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

RETURN OF INCOME TAX.—It has occurred to me that the following list of grounds upon which a reduction or return of Income Tax should be claimed might interest readers of the *Gardeners' Chronicle*. The list hereunder is by far the most complete which has ever been issued to the public. Any advice I can give to a reader it will be a pleasure to give without any fee. Claims may be preferred by any :—(1) Who pay bank interest *whatever the income may be.* (2) Who pay Insurance premiums *whatever the income may be.* (3) With incomes not exceeding £700 per annum. (4) Minors (sometimes even for 20 years). (5) Who have come of age within the last three years. (6) Beneficiaries under wills or trusts. (7) Femes soles, widows or spinsters. (8) Executors, &c., of deceased persons' estates. (9) Who have been over assessed. (10) Who have suffered business losses. (11) Whose profit during the last year has decreased. (12) Who have been doubly assessed. (13) Who have discontinued their business. (14) Who have received capital which has been assessed as income. (15) For set-off of loss against profit or against private income of self and wife. *F. Lodge Rosser, Secretary, The Income Tax Reclamation Association, Ltd.*

WINTER-FLOWERING CARNATIONS.—Having read with interest the note on p. 91 of the winter-flowering American Tree Carnations from Eastwell Park Gardens, I should like to add to Mr. Weston's excellent list the following varieties:—Prosperity, white overlaid with pink, a strong grower; Cressbrook, white; Lewis Bradbury, cerise; Miss Clibran, scarlet; Mrs. G. M. Bradt, flesh colour; Julian, dark crimson, a strong grower; Duchess of Portland, pink; and Bronwen Lewis, yellow, tipped with pink. The above varieties are not all strictly American, but have the long, wire-like stems so desirable, and should be in every collection. *Henry Butcher, Wheatley Park, Doncaster.*

EXCELSIOR BOILER.—In respect to the enquiry in the *Gardeners' Chronicle* for February 10, I may say that I have had an Excelsior Boiler in use here for over 17 years. It is economical, easily managed, quick in action, and generally satisfactory. *W. H. Lewis, Tythrop House Gardens, Thame, Oxon.*

AZALEA BEDS.—I planted an Azalea bed here two years ago in a conspicuous position on the lawn, and one of the first things that occurred to me was that the Azaleas must be planted reasonably thickly to afford the desired effect when they were in flower. Secondly, I wanted a flower bed, so to speak, after the Azaleas were over. This is how I contrived to overcome the difficulty. Some bushy plants of the best coloured varieties of Japanese Acers were mixed with the Azaleas. Afterwards, two arches were made of stout iron, and put over the bed, crossing each other in the centre. On these I planted Dorothy Perkins Rose. Last season each Rose plant made about nine growths 10 feet long. These I intend to tie to temporary irons which will be placed over the bed after the Azaleas have flowered. The margins of the bed are planted with Veronica rupestris, and there are good clumps of Daffodils in the centre In March I planted Gladiolus Nanceianus, and lifted them after they had flowered. In June all bare places were planted with pink and white flowered Pelargoniums. The effect was very satisfactory. *T. G., Salop.*

PLANTS IN FLOWER AT CULZEAN CASTLE, AYRSHIRE.—The following list of plants in flower in the gardens of Culzean Castle, Ayrshire, on January 31, 1906, testifies not only to the mildness of the season and the mild climate of the Ayrshire coast, but also to the wealth of shrubs and other plants cultivated at Culzean, where the Marquis of Ailsa has for some time been forming a magnificent collection of plants, many of which are hardy there and only half-hardy in the greater part of Scotland:—Shrubs: Rhododendron Nobleanum, R. præcox, Nuttallia cerasiformis, Berberis repens, B. aquifolium, B. nepalensis (japonica R.Br.), B. Darwinii, Escallonia macrantha, E. exoniensis, Garrya elliptica, Jasminum nudiflorum, Pieris (Andromeda) floribunda, Viburnum Lantana, Correa speciosa alba, Ceanothus Veitchianus, Arbutus canariensis, Veronica parviflora, V. speciosa variegata, &c., Pyrus japonica, P. Maulei superba, P. M. alba, P. Simoni, Arundinaria (Bambusa) Simoni, Cytisus albus, Clianthus puniceus, C. p. albus, Erica carnea, E. vagans, E. stricta, E. arborea, Clematis calycina, Hamamelis arborea, H. japonica, Rubus spectabilis, Ulex europæus. Herbaceous plants: Colchicum hydrophilum, C. cilicicum, Scilla bifolia, Eranthis cilicicus, E. hyemalis, Iris reticulata, I. Krelagei, I. histrioides, I. alata, I. Histrio, I. persica purpurea, I. taurica, I. Vartani, I. Danfordiæ, Anemone blanda, Primula veris, P. elatior, P. cashmeriana, P. denticulata, P. d. alba, Leucojum vernum, Galanthus nivalis (single and double), G. Elwesii Cassaba, G. E. præcox, G. E. ochrospeilus, G. plicatus, G. cilicicus, Arabis alpina fl. pl., Aubrietia purpurea, Sternbergia Fischeriana, Schizostylis coccinea, Nymphæa odorata (?) in bud, Bellis perennis (double and single), Calceolaria amplexicaulis, Crocus aureus, C. Imperati, Vinca major elegantissima, Cheiranthus Cheiri in quantity, Lunaria biennis, Myosotis, Petasites japonicus, P. fragrans, Narcissus scoticus, Helleborus colchicus. The Marquis of Ailsa kindly informs me that Clianthus puniceus, which is on a south wall, and has its stem of the thickness of a man's wrist, was only a small plant when planted about two or two and a half years ago. It now covers a large space of the wall, and at the date mentioned was covered with large buds. *S. Arnott.*

MONTBRETIAS.—These plants are very effective if grown in the following manner. Take up the bulbs early in spring every year, and separate them, removing all the offsets from the bottom of each bulb. Afford the ground a liberal dressing of well-rotted manure, and plant the bulbs at 6 inches apart, burying them 2 inches deep. Given this treatment, I find Montbretias to flower very freely, and the bulbs increase in size, and produce two or three spikes of bloom.

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* Excellent photographs showing these galls (natural size) on diseased plants are given by von Lagerheim in the *Bihang k. svenska vet. akad. Handl.*, XXIV., Afd. III., 3-12, Taf. I., II. (1898). For an account of the first appearance of the fungus in Europe see Magnus in the *Ber. d. deutsch. botan. Gesellsch.* XX., 291-296, Taf. XV (1902).

A long border planted with them and backed by a row of Japanese Anemones, affords such an effect in August and September as could hardly be forgotten. *G. Buckley, Tarporley, Cheshire.*

High Price for Willow Timber.—At the sale held last week on Sir Walter Gilbey's estate Willow timber suitable for bat-making fetched 11s. 6d. per foot. Through the medium of papers connected with the timber trade I have for long advocated the extended culture of Willow timber suitable for the manufacture of cricket bats, but although a few plantations were formed some ten years ago, yet not one tithe of the area that our ever-increasing demands warrant has been brought under cultivation. When we consider that the Willow succeeds best on damp land that would be considered unsuitable for agricultural purposes generally, that it is of the freest growth and may be readily propagated, and that the price of the timber is far ahead of that of any other tree grown in this country, the wonder is that it is not more generally cultivated. For planting in marshy ground by lakes and streams—and there are hundreds of acres of such land throughout the country—the Willow is peculiarly suitable, whether viewed from an æsthetic or an economic point of view. *A. D. Webster, Regent's Park, February 17, 1906.*

Plants for associating with Rhododendrons.—This is a very difficult question to solve, many persons strongly objecting to any other plants than Rhododendrons in the beds, while others dislike bare ground, however small. Those with the latter taste have ample subjects to choose from, and in gaps or open spaces between large specimens, providing there is no overhead growth, Foxgloves will grow to perfection. A mass of these plants in full bloom in such a position is a sight not easily forgotten. In beds of younger plants, where space is left for their future development, there is plenty of plants to choose from, and these may be selected to harmonise with any position. If a cool effect be desired, Periwinkle, ground Ivy, and Ferns, planted either separately or in combination, will make a splendid carpet, and they each have the advantage of choking all weeds, a consideration where labour is limited. Where a brighter effect is desired, Pelargonium Flower of Spring is excellent for the purpose, its white leaf against the dark foliage of the Rhododenrdons producing a pleasing effect. In a position where plenty of bloom is desired bulbs could be planted, preferably Snowdrops, to be followed by Tagetes, which plant does well in such a position, and is one of the most continuous bloomers of all the annuals, commencing, as it does, to bloom at the beginning of June and continuing until cut down by frost. Some varieties of Rose are also suitable, especially the variety Hermosa. This is almost a perpetual bloomer, and its lovely pink flowers are among the best for table decoration. With this latter combination a few Larch posts, to which are trained some rambling Roses, would much improve the effect, especially when seen at a distance. *Jno. Barker.*

Small Holdings and what may be grown on them.—The happenings in the political world are likely to be followed by alterations for the bettering of the conditions of the peasantry, farmers, and small cultivators as a class. Taking it for granted that endeavours will be made by those in authority to keep as many people as possible on the land, by granting long leases, free from irksome restrictions as to manuring and rotation of crops, sale of produce off the land, and other matters of importance to holders, it will become a part of the duty of parish and county councils, to a much greater extent than at present, to teach the new tenantry better methods of cultivating the land than those hitherto in vogue. Not the least important of these relate to the laying down of fruit plantations, the utilisation of walls of every sort of aspect in the cultivation of the choicer kinds of fruits, the raising of vegetables for town consumption, these including such rare commodities as Asparagus, Sea Kale, Mushrooms, Gourds, French Beans, and the white seeded varieties, the Haricots of the shops, a far superior food to the potato when eaten in the ripe state, while the more common kinds of vegetables are certain to be grown in abundance on almost all sorts of soils. Still thinking of the culinary side of things, there ought, in a few years after the system is inaugurated, to be no scarcity in any part of these islands of Strawberries; and common, Japanese and American species, and varieties of Brambleberries; Quinces, common and ornamental Crabs, which make such excellent jellies. No peripatetic lecturer holding forth in the village is worth his salt who does not, or is unable to, teach the rustic how to raise fruit trees from seeds, and how to treat them afterwards, and the best methods of grafting and budding stocks thus raised. This applies to all of our commoner kinds of fruits without exception. Budding and grafting should always be insisted upon, the trees coming into fruit at an earlier age, and the produce being finer and of greater value than that from the usual run of seedlings. We are acquainted with parts of the Continent where farmers raise Peaches, Apricots, Plums of sorts, from seeds, but it is extremely rare to meet with a truly nice, delicious fruit. But then, these people have never tasted one, and have no knowledge of anything better than their own. We have an idea that the Peaches sent us from the Cape are seedlings, and unselected at that. The various productions of the garden and farm that would come under the purview of the small holder cannot be enumerated here, but enough has been said to show there is a wide choice of subjects from which to select. Bee keeping should not be overlooked. *F. M.*

First Early Daffodils.—It is the early bird that catches the worm. It is the early bloom that makes the profit for the market-grower. Here at Ard Cairn, Cervantes, a pale straw-coloured form, not unlike the well-known Irish Princeps, has been in flower under glass since the middle of December, and now out of doors it is full of flowers, and when this letter is published it will be in the fullest state of perfection. Large, late sorts will never get plentiful enough to remunerate the grower who wants to make ends meet. What we want is early varieties, with good constitutions, such as Princeps, Golden Spur, etc. I am sending some of the flowers of Cervantes. Poeticus præcox grandiflorus is also one to be noticed. It flowered here under glass at Christmas, and is now in full promise out of doors. As a fine, sweet-scented large-flowering sort it has no equal. Personally I have been working up stocks of all early sorts, the aim being that in years to come, not only in England, but all over the Colonies, the grower shall get his reward. There is another good early trumpet variety that I must mention, viz., Early Bird or North Star. It has a rather small bloom, but is a good grower, and flowers even earlier than Cervantes. I should like the Daffodil Committee to get together a collection of early sorts, no matter how small the flowers, provided the constitutions of the plants be good, and the petals still and imbricated. I have one of this class, but only a few bulbs of it. It promises to be the best thing in the market. It is now in flower out of doors, and is all that can be desired. *William Baylor Hartland, Ard Cairn, Cork. February 10, 1906.*

Examination in Horticulture.—The question of the value to gardeners of the examination of the Royal Horticultural Society has been put to me over and over again. Mr. Watson is perfectly right, and if the L.C.C. is making it "a test for promotion among gardeners," irrespective of any previous test for practical experience, I, for one, unhesitatingly say it is a wrong one. My reply to all questioners is, they must apply to whomsoever has superintended the examiners' practical work in the garden for a second certificate, independently of that of the Royal Horticultural Society. The examinations have great value in securing mental cultivation in the subject of horticulture; but they are unquestionably of little, if indeed it may be of any security, for skill in practical work. It is obviously impossible for the Society to undertake to estimate a young gardener's proficiency. Such is only possible after having seen how he has worked through each season of the year. *George Henslow.*

Fumigation with Hydrocyanic Gas.—Having seen *A. D.'s* remarks on Mr. Dobson's article headed "Vaporising with Hydrocyanic Gas," and whilst agreeing with him as to the danger of the operation, I think that his query as to whether "the game is worth the candle" is premature. He should reserve his judgment until this method of fumigation has been given a fair trial, so that the relative conditions of temperature and atmosphere, and also the quantities of acid and cyanide required to obtain the best results, may be ascertained. *A. D.* states that "we have plenty of patent insecticides that are dangerous to neither man nor plant," but I question if any one of them approaches in either cheapness or efficacy the method described by Mr. Dobson. As to his statement that "what gardeners have done they can do," surely this is not the spirit in which to meet any attempt to lessen and facilitate the numerous and arduous duties of the gardener. If *A. D.* were to ask any gardener of advanced age and life experience whether he would like to do without the appliances and innovations that have come into use during the last 40 or 50 years, I don't think he would be answered in the affirmative. The experimental efforts of Mr. Dobson are surely deserving of encouragement, not of the hasty criticism meted out by *A. D.*; at least, that is the humble opinion of *B. M. H.*

Cyaniding.—All who desire to try this fumigant should write to Strawson's, Queen Victoria Street. Mr. Strawson knows more about cyaniding than any man living, and his treatise as published is extremely simple. *T. A. Weston.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

February 13.—*Present:* Dr. M. C. Cooke, V.M.H. (in the chair); Dr. M. T. Masters, F.R.S.; Sir John Llewelyn; Messrs. Massee, Douglas, Saunders, Worsley, Keeble, Michael, Gussow, Nicholson, Lynch, Cuthbertson, Druery, Sutton, Rolfe, Hemsley, Bowles, and Chittenden (Hon. Sec.).

Apples with Median Lateral Groove.—In reference to these shown at previous meetings by Mr. Spencer Pickering, Mr. G. S. Saunders showed figures of some fruits collected some time ago at Cheltenham deformed in a similar manner, except that the groove ran round the Apple in a spiral manner.

Grubs in Stem of Common Laurel.—From R. W. Bourne, Esq., of Bishopstoke, came specimens of insects taken from the stem of the common Laurel, and branches showing aerial roots from the surface similar to those so frequently found in this shrub when grown in damp, close situations. Mr. Bourne stated that the grub, which was small and white, but later brown, "appeared to work upwards and to kill the branch by destroying the inner part of the bark, the leaves on the attacked branches turning yellow, and dying. Branches about 1½ inches or more in diameter are usually attacked." Mr. G. S. Saunders reported that the Laurels are "attacked by the larvæ of a small moth, one of the Tortricinæ, most probably Semasia wœberiana, but the insects cannot be the direct cause of the outgrowths, as they are found on pieces of the shoots that are not attacked by the caterpillars, but they are probably formed indirectly from this cause. The burrows of the larvæ may weaken the branches by to some extent cutting off the food and water supply, and they may in self-defence, as it were, start these adventitious roots.

Galls on Ash.—Mr. G. Nicholson showed terminal growths of Ash which had been malformed and caused to produce numerous lateral and adventitious buds through the attacks of the mite, Eriophyes fraxini. This particular gall appears more rare than many caused by the attacks of other members of the genus.

Vines Attacked by Weevils.—Dr. Masters drew attention to some young shoots of Vine which had just started, but which had been bitten completely through by a weevil, probably Otiorhynchus sulcatus.

Pelargonium Diseased.—Mr. Worsley showed leaves of a zonal Pelargonium which were spotted with numbers of small, brown, dry spots. Mr. Worsley said that the disease spreads rapidly, and that eventually the plant died as a result of the attack. Mr. Massee took the leaves to examine further. Mr. Worsley also showed some mealy bugs which had come from Jamaica with Bananas. Mr. Saunders took them to examine.

Galls on Birch.—Mr. Hans Gussow showed some of the large malformed growths which are so common on the silver Birch, where the buds are injured by mites, and as a result produce numberless lateral and adventitious buds forming a confused mass of growths similar to those shown by Mr. Nicholson on the Ash. The mite in this case is Eriophyes rudis.

Scale on Willow.—Mr. Lynch, who was heartily congratulated by the committee on the occasion of his receiving the Victorian Medal of Honour, showed shoots of Willow badly attacked by a scale insect, a species of Chionaspis salicis, Linn.

Variation in Potatos. Dr. Masters commented on the remarkable exhibit of Potato varieties shown in the hall by Messrs. Sutton. Mr. A. Sutton drew special attention to Solanum Commersoni and to a specimen of the tubers raised by Mons. Labergerie, which that gentleman called S. Commersoni Violette, as he considered it to have originated as a sport from S. Commersoni. Mons. P. Vilmorin, who had grown S. Commersoni for many years (and, like others, had never found any sporting proclivities in that species), regarded the alleged sport as a tuber of the Blue Giant, which has been in cultivation for a long period, and which had by some accident got mixed with the tubers of S. Commersoni. Mr. Sutton showed *Blue Giant* and the alleged sport side by side, and pointed out that the slight differences between the two were only such as might be expected when two examples of the same variety grown in widely separated districts were shown side by side. Mr. Worsley pointed out that Mons. Haeckel claimed to have obtained intermediate forms between S. Commersoni and the alleged sport, and Mr. Sutton said that M. Labergerie considered that he had seen the sport reverting completely to S. Commersoni.

Plants Exhibited.

1. Mr. R. I. Lynch, V.M.H., of Cambridge, showed a flowering specimen of *Alpinia officinarum*, Hance, the "radix galangæ minoris" of the pharmacologists, a plant that very rarely flowers in this country.

2. He also showed some specimens of *Rosa lævigata*, a large-flowered species of Rose, which he thought useful in corridors.

3. *Crocus veluchensis* (Herb). — This Grecian species now for the first time seen in cultivation, was shown by Mr. A. E. Bowles, F.L.S., who compared the actual specimens with the published figures. The present species differs from C. vernus and C. banaticus in its diphyllous proper spathe and in the absence of basal spathe; from C. Sieberi (specimens of which were also shown) in the absence of the yellow spots in the throat and in the small corm.

4. Dr. Masters showed flowering specimens of *Daphne odora*, which proved perfectly hardy in the open. *Prunus Mumé*, one of the Japanese Plums, and *Jasminum primulinum*, a newly introduced Chinese species, all cut from the open ground, and sent by Mr. Veitch, of Exeter.

5. Mr. A. Sutton, F.L.S., showed specimens of a species of *Pleione*, *P. yunnanensis* (Rolfe), which had been sent to them by a missionary from China, and had been grown on by them. The greater number of species of this genus are native in the mountains of India, but this came from further to the north-west, and was taller than the majority of the Indian species. On the motion of Dr. Masters, seconded by Mr. Druery, a Botanical Certificate was unanimously awarded to this plant.

American Blight on Apples.—From L. L. Savill, Esq., came shoots of Apple badly attacked by the well-known American blight. He remarked upon the fact that the tits seem particularly fond of pecking the swellings and canker-like growths produced by this pest on the branches, and presumably devouring the aphides.

Celery Woody and Spotted.—F. A. Gregson, Esq., of Cranleigh, sent Celery, complaining that the plants were always woody, and lacked the nutty flavour which is desirable, this being specially the case when the crop was grown on sand, less so when they were grown on clay. The members of the committee considered that in all probability the defect was due to lack of water during the hotter part of the year.

Orchids with Spots on Leaves, &c.—E. F. Clark, Esq., of Chamonix, Teignmouth, sent parts of Orchids, chiefly Cattleyas, which were spotted and deformed in growth. While fungi were certainly present in some of the spots, it was thought that the primary cause of the trouble lay not so much with the fungus as with a too wet compost and lack of air to the roots, and possibly a too damp atmosphere.

THE SOCIETY FOR HORTICULTURAL SCIENCE.

This society held its fourth annual meeting in New Orleans, beginning December 29th.

The President's Address.

The address of the president, Prof. L. H. Bailey, dealt with the recent progress in American horticulture, covering the period since 1902. This progress, the Professor holds, has been largely along the line of further development of work already established rather than in the projection of entirely new lines. The most active agents in the progress of horticulture along educational, scientific, and literary lines are the horticultural and agricultural colleges and experiment stations, and the U.S. Department of Agriculture. Through these agencies there have been published during the past three years nearly 600 bulletins on horticultural subjects.

In technical horticulture plant-breeding is occupying unusual attention. The work of Mr. Burbank was stated as remarkable and significant, but often sensationalised and overstated. In commercial horticulture there has been a remarkable development in various directions.

Very valuable work has been done by the Division of Pomology of the U.S. Department of Agriculture by showing the relation of cold storage to the handling of fruits. Green or unripe fruit is undesirable for storing. It is not matured, remains unpalatable in quality, and is liable to "scald." Ripe fruit, carefully handled and put directly into proper cold storage, will keep a very long time. Investigation of the Californian methods of picking and handling Citrus fruits has shown that carelessness in clipping stems, in handling the individual fruits, and delay in putting the fruits into storage, result in a relatively short life and a high percentage of decay.

In fruit growing there appears to be a marked tendency toward better grading, smaller packages, and dessert quality.

The wholesale cut-flower trade is increasing. Increased attention is being given to the adornment of home grounds and to the use of native plants for this purpose, particular attention being called to the genus Cratægus. Attention was called to the valuable work of the Office of Seed and Plant Introduction of the U.S. Department of Agriculture, in the introduction of thousands of new species, strains, and varieties of plants.

The Influence of Coloured Light on Plant Growth.

In a comprehensive paper on light as a factor of plant culture, V. A. Clark discussed the effects of various coloured lights, of direct and diffused sunlight, and of various artificial lights on the growth of plants. Light rays of different wave lengths have very different effects on plant organisms. The red rays of the spectrum in general promote vegetative growth, particularly that of the leaves, while the more refrangible blue rays act upon the molecular structure of the plant giving rise to mutations. In arid regions direct sunlight is injurious to many plants, and the successful culture of such plants depends upon furnishing them with partial shade. The composition of light was stated to be of much greater importance than its intensity. The electric arc light, being very rich in chemical rays, should prove of special advantage where vegetative growth is sought. Roots and stems require no light. Tender stem growth in the case of Celery is secured by the exclusion of light. Rhubarb stems also develop best in darkness when forced, and some plan of excluding the stems from light in field growth should be found. Leaf growth is largest and tenderest in light of rather low intensity, a fact which suggests the desirability of growing salad plants in partial shade, or, better still, in red light. The use of the blue light inhibits leaf growth. This might have particular application in regions of intense sunlight in the growth of seedlings. Seedlings with normal leaves transpire too rapidly when transplanted, and often succumb. Growing them in blue light would reduce their size, and hence better adapt the plant to growth under arid conditions where transpiration from large leaves would be excessive. From observations in Arizona, it is believed that the intensity of direct sunlight is greater than the intensity most favourable to bud formation, and that better results would be obtained with very light shading on the south and south-west sides of fruit trees. The suggestion is made that in flower growing the plants should be grown in red light until the flowering period, and then grown in blue light, which favours flower development. Volatile oils appear to develop best in red light. Flowers grown for fragrance might be grown in a combination of red and blue light.

The growth of plants in normal white light was stated to be a kind of compromise between conflicting interests. Instead of thus growing plants under one unvarying condition, they should be grown in the kind of light most suited to the particular stage of development and the use to which the crop is to be put. Strong light has been found in some instances to inhibit the growth of the pollen tubes. This is thought to be the reason why Tomatos and Cucumbers do not bear fruit in midsummer in Arizona. Strong direct sunlight in summer also prevents the formation of chlorophyll. Thus, Strawberries are yellow for about three months in summer, even when grown under the shade of cheese cloth. When grown on the north side of a dense shade of Sorghum or cotton, the plants remain green and dense all summer, and are the most vigorous in the garden. It is believed that the matter of shading is of greater horticultural importance in arid regions than fertilisation is in the East.

Horticultural Botany.

Mr. L. C. Corbett presented a paper on horticultural botany. He stated that horticultural botany commenced where systematic botany left off. Horticultural botany should give us uniform, detailed descriptions of our cultivated varieties of fruits, vegetables, and ornamental plants, together with a systematic classification and arrangement of such varieties. In a description of horticultural varieties, such matters, in addition to the usual descriptive notes, should be included as the history of the variety, parentage and line of descent, and its behaviour in breeding experiments—whether possessing a dominant or recessive character, etc. The matter of botanical and scientific nomenclature being still unsettled, Professor Corbett recommended that horticulturists should follow some standard guide as the Cyclopædia of American Horticulture.

Orchards in the Western States.

The Irrigated Orchards of the Western States formed the subject of a paper prepared by Mr. M. B. Waite. The paper pointed out the increasing importance of orcharding in the Rocky Mountains Plateau and the adjacent arid regions of the western half of the United States, and called attention to some of the differences between these sections and the humid eastern United States.

Potato Scab.

Some interesting observations were forwarded to the Society by Prof. W. Paddock, of the Colorado Agricultural College and Experiment Station. From experiments carried out at the station, Professor Paddock questions whether eastern potato scab may not be due to Rhizoctonia rather than to Oospora. He suggests that Oospora may often be a parasite upon Rhizoctonia and not actually concerned in the scab at all. It is believed that the whole subject of potato scab is very much in need of investigation.

Mr. Burbank and his Work.

Prof. N. E. Hanson reported the results of a visit to Luther Burbank, in which he stated that some of our scientific workers are in danger of criticising Mr. Burbank's work too much, and suggests that before they criticise more they should produce one single seedling from their own work that in a measure approximates to the achievements of Mr. Burbank. Burbank makes constant use of the principle laid down by Darwin that excess of food causes variation. Top-grafting is extensively resorted to in his work, one Apple tree being cited which contains 526 kinds of Apples top-grafted upon it. The recent notoriety to which Mr. Burbank has been subjected in periodicals has resulted in thousands of people visiting his place and occupying his time, to the detriment of his work and health.

Soil-Heating.

Prof. U. P. Hendrick presented the results of an experiment designed to test the effects of superheated soils on plants. The work was carried out in a greenhouse on Cucumbers. The bottom heat was supplied in bench beds, the soil of one section being kept at an average temperature during the experiment of 70.8°, of a second section at 73.8°, and of a third section at 83.3° F. The plants kept in the soil at the highest temperature came up about three days earlier than those kept in the bed at medium temperature and six days earlier than those in the bed kept at the low temperature. There was about the same difference of time in the formation of true leaves. The plants bloomed in the hot bed in 35 days, in the medium hot bed in 39 days, and in the cold bed in 44 days. The first mature fruits were picked from the hot bed in 74 days, from the medium hot bed in 77 days, and from the cold bed in 82 days from seeding. The average number of fruits was slightly more in the medium hot bed, and they were a little larger than in either of the other beds.

Commenting on these results, Professor Hendrick stated that they represented but one experiment; the number of plants used was but 12 in each bed; much variation occurred in the behaviour of individual plants in the same bed; and that there was a slight difference in the position of the beds, but, so far as he knew, they represented the first recorded work along this line, designed to secure definite data regarding the best soil temperature in which to grow our various greenhouse crops. All that is available at present is the dogmatic assertion of gardeners to avail themselves of brisk or mild heat or none at all. Something more definite is needed, and he expressed the hope that others might take up work along similar lines.

Fruit Surveys.

H. P. Gould sent a paper on "The Significance of Fruit Surveys." He considered a fruit survey as involving "a study of varieties with special reference to their requirements; a study of conditions with special reference to this influence on varieties; a correlation of the factors brought out in these two lines of investigation with regard to cause and effect." A fruit survey of this character should assist growers in the selection of varieties for their conditions. The history of the American Pomological Society is that of a study of varieties and their adaptation to different localities and conditions. A commercial fruit grower no longer asks for the best variety, for, in its broad sense, such a one is known not to exist, but he requires a variety which will best serve a particular purpose under definite known conditions. A fruit survey should furnish information along these lines.

Scientific Problems in Louisiana

was the title of a paper presented by F. H. Burnette. Foremost among questions demanding attention in a scientific way in the growing of fruits is the late-frost problem. This is most serious perhaps in late February, when most of the trees are in bloom or have even formed small fruits. In addition to the usual methods of warding off frosts, he suggested the desirability of breeding up later varieties and more hardy varieties in the case of Citrus fruits. Breeding experiments with Apples seem to indicate that by this means varieties will be secured adapted to the home needs of Louisiana growers. Much improvement has been made in the case of Pecans, but other varieties are needed which will come into bearing earlier. Some trees also are self-sterile. The control of fungi is a serious problem in Louisiana, and resistant varieties are needed. This has been partially met in the case of New Orleans market Cantaloupe and New Orleans market Cucumber. Among Pears, Smith shows by far the greatest power of resistance. Some Oaks have been found upon which Mistletoe has not been able to gain a foothold. Seedlings of these are being grown to see if this character can be perpetuated.

Persimmons.

A paper by Mr. David Fairchild was presented on the "Japanese Method of Ripening Persimmons," from which it appears that ripe Persimmons, grown according to the Japanese method, are as firm in texture as a Northern Spy Apple, free from astringency, and of a delicious flavour. Investigations as to methods of curing ripe Persimmons show that the Japanese put the Persimmons in sake (Japanese beer) casks as soon as the casks are emptied. The heads of the casks are immediately replaced, and the package made air tight. In from 5 to 15 days, according to weather conditions, the Persimmons are cured and can be removed and marketed, keeping in a firm, edible condition for a long period of time. It is believed that if Americans wish to cure Persimmons according to the superior Japanese method, it would be advisable to make casks of southern Cypress and saturate them with first-class sake imported from Japan.

Forcing Rhubarb.

A paper entitled "Forcing Rhubarb in the Dark" was presented by W. R. Lazenby. Rhubarb roots grown from seed planted early in the spring are pulled out the following fall and allowed to freeze. The roots are then put in beds in the cellar, and covered from 2 to 3 inches deep with dirt, and kept in total darkness. With a temperature of 70° F., marketing the crop can begin within 20 days, and cuttings can be made for about four weeks. At a temperature of 55°, about 30 days are required before the first cutting can be made. Drying the roots was found to have about the same effect as freezing. Either drying or freezing serves the same purpose as a long rest, which is otherwise required, and the growth is more vigorous. When thus grown in darkness the leaf blade is greatly reduced; the green colour is wholly absent; the texture is more crisp and delicate, due to a lessened development of woody fibre; the skin is much thinner than when grown in light; the water content is increased 6 to 10 per cent.; and the flavour generally improved. The first two or three cuttings give the finest stalks. Two crops can be grown in the same space during the winter. By double cropping, $35.55 worth of stalks was sold from an area of 185 square feet.

Horticulture in France.

Mr. C. B. Smith gave a review of "Horticultural Progress in France," in which he summarised the experimental data that had appeared in that country during recent years on such subjects as the etherisation of plants, the methods of pruning by disbudding, and the results secured in the culture of the Uruguay Potato (Solanum Commersoni).

American Grapes.

Mr. T. V. Munson presented a paper on "Improvement of Quality in Grapes," considering the subject from the standpoint of improvement by cultivation, by selection of kinds, and by breeding or hybridisation. *C. B. Smith, Department of Agriculture, Washington.*

Obituary.

Mr. John Forrest.—We regret to announce the death of Mr. John Forrest, late head gardener to the Earl of Aberdeen at Haddo House, Aberdeenshire, which occurred after a few hours' illness at Craiglea, Culter, Aberdeenshire, on Friday, February 16. Mr. Forrest, who was in his 73rd year, retired from his position at Haddo House only last year, and had since resided at Culter, a beautiful spot on Deeside, some seven miles from Aberdeen. Previous to becoming head gardener he was foreman at Haddo House, after which he was for a time head gardener to the late Mr. Thompson, Banchory House, near Aberdeen. Mr. Forrest returned to Haddo House as head gardener in the year 1871, so that altogether he had been in the service of the Aberdeen family at Haddo House for nearly 40 years. On the occasion of his retirement in June last year Mr. Forrest was entertained by Lord and Lady Aberdeen at a garden party, to which were invited a large number of ladies and gentlemen residing in the district around Haddo House. On that occasion Mr. Forrest was presented with a number of valuable gifts from the Aberdeen family, the servants on the estate, and from neighbours, testifying to the esteem in which he was held. In making the presentations, Lord Aberdeen spoke in terms of cordial appreciation regarding the manner in which Mr. Forrest had not only devoted himself to the duties of his position as head gardener, but had also identified himself with all the interests and concerns of the family at Haddo House. Lord Aberdeen went on to say also that, beyond the immediate circle with which he was concerned, Mr. Forrest had been a most acceptable and desirable personality and influence in the district. The funeral took place at Methlick churchyard, near Haddo House, on Monday, February 19. Deceased had been a widower for some years.

William Chamberlayne Breese. — The loss of another good and respected gardener has to be mourned in the death on the 12th inst. of Mr. Breese, head gardener to Mrs. Ackers, Moreton Hall, near Congleton, in Cheshire. Deceased was sent to Keele Hall, Staffordshire, as a journeyman in 1859, by Messrs. Dicksons, of Chester. After four or five years he became head gardener on an estate in Ireland, and subsequently, after a further time spent at Keele, removed to Moreton Hall in 1872, where he succeeded to Mr. Mounsden. Mr. Breese was gardener at Moreton for nearly 34 years, and during the whole time was remarkable for growing excellent crops of grapes, particularly of the variety Muscat of Alexandria. But he was a generally good, all-round gardener, and the Moreton Hall gardens were kept always in an exemplary condition. A man of high character, kind heart, and good professional experience, deceased was well qualified to judge at horticultural shows and was frequently invited to do so. Mr. Breese was in the 69th year of his age, and succumbed after a few days' illness to an attack of pneumonia. His name has appeared year after year among those correspondents who have contributed to our annual report on the condition of the fruit crop.

THE WEATHER.

GENERAL OBSERVATIONS

The Following Summary Record of the weather throughout the British Islands, for the week ending February 17, is furnished from the Meteorological Office:—

The *weather*. The general character of the weather was changeable. Several very bright intervals were experienced in almost all districts, but few days passed without a fall of rain or showers of hail, sleet or snow. The snow was heavier and more general in the north than elsewhere. Lightning was observed at Fort William on Wednesday and Thursday, thunder and lightning occurred at Newquay on the former day, and thunder at Swanaton on Friday.

The *temperature* was again below the average, the deficit being least (1·2°) in England and greatest (about 4°) in Ireland. The highest of the maxima were recorded late in the week, and ranged from 51° in England and the Channel Islands to 45° in Scotland N. The absolute minima, which were read during the earlier half of the period, were as low as 11° or 12° in Scotland E. and N., at Balmoral and Fort Augustus respectively, but elsewhere varied from 22° in Scotland W. and 23° in the Midland Counties to 27° in Ireland N., and to 32° in the Channel Islands.

The *rainfall* was in excess of the average over the Kingdom generally, but below it in Scotland E. and England N.E. In Scotland W. and England N.W. the amount for the week agreed very closely with the normal. The excess was greatest in the south and south-west of England and the Channel Islands.

The *bright sunshine* exceeded the mean in all districts except England N.E. and the Channel Islands, the excess in most instances being large. The percentage of the possible duration ranged from 43 in Ireland S. and 42 in Scotland W. to 29 in the Channel Islands and England N.W. to 26 in England E. and the Midland Counties and to 23 in England N.E.

THE WEATHER IN WEST HERTS.

Sunshine after rain.—The spell of wintry weather lasted only a few days, when a return to somewhat less inclement conditions took place. During the past week there were only two unseasonably cold days, and only one unseasonably cold night. On the other hand, there were no really warm temperatures for the time of year. The ground is now at both one and two feet deep at about an average temperature. The most noteworthy feature of recent weather has been the frequent falls of rain and snow. In fact, since the present month began there have been only two days on which no rain at all fell—the total fall for the three weeks amounting to two inches, or about the average for the whole month. To show how persistent the rainfall has lately been, I may state that during two consecutive days of the past week there were only 15 rainless hours. As during the greater part of the week the atmosphere remained damp nearly the whole of the rain, as shown by the percolation gauges, must have gone permanently into the ground. The first and last days of the week were particularly sunny, but during the intervening five days the sun shone for altogether only 1½ hours. The wind has been, as a rule, moderately high, and on one day the mean hourly velocity for the 24 hours was 14 miles, and in the windiest hour 18 miles was recorded direction west. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 3 per cent. Vegetation is not now as forward as it was at the beginning of the month A selected patch of yellow crocuses first showed an open flower on the 20th, which is three days earlier than its average date of flowering in the previous 19 years. *E. M., Berkhamsted February 21, 1906.*

MARKETS.

COVENT GARDEN, *February 21.*

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones (pink) doz. bunches	2 0- 4 0	"Mimosa," dz. bun.	6 0- 9 0
— fulgens	2 6- 3 0	Narcissus, "Paper White," doz. bunches	1 6- 2 6
— cardinalis	3 0- 4 0	— Soleil d'Or	1 6- 2 0
Azalea indica., per doz. bunches	4 0- 5 0	— Golden Spur, per doz. bnchs.	5 0- 6 0
Azalea mollis, bun.	1 0- 1 6	— Horsfieldi	5 0- 6 0
Bouvardia, per doz. bunches	6 0- 7 0	— Ornatus	3 0- 4 0
Calla æthiopica, per dozen	2 0- 5 0	— Princeps	3 0- 5 0
Camellias, doz.	1 6- 2 0	— Sir Watkin, per doz. bunches	5 0 6 0
Carnations, per dozen blooms, best American various	3 0- 5 0	— Telemonius, plenus, per doz. bunches	4 0- 5 0
— smaller do.	1 6- 3 0	Odontoglossum crispum, per dozen blooms	2 6- 3 0
Cattleyas, per doz. blooms	9 0-12 0	— grande, per dozen blooms	4 0- 5 0
Chrysanthemums, per doz. best blooms	2 0- 4 0	Ornithogalum (Star of Bethlehem) per doz. bchs.	1 6- 2 0
— small blooms, per doz. bchs.	9 0-12 0	Pancratiums, doz.	3 0- 5 0
Cœlogyne cristata, per dz. blooms	1 6- 2 0	Pelargoniums, show, doz. bun.	4 0- 6 0
Cypripediums, per doz.	2 0- 2 6	— Zonal, double scarlet	8 0-12 0
Dendrobium Wardianum and nobile, per doz. blooms	2 0- 3 0	Primula, double white, per doz. bunches	5 0- 6 0
Eucharis grandiflora, per doz. blooms	2 6- 3 0	Ranunculus, doz. bunches	10 0-18 0
Euphorbia jacquiniæflora, per doz. sprays	4 0- 6 0	Roses, 12 blooms, Niphetos	2 0- 4 0
Freesias, per doz. bunches	2 0- 3 0	— Bridesmaid	3 0- 6 0
Gardenias, per doz. blooms	3 0- 5 0	— Kaiserin A. Victoria	3 0- 5 0
Helleborus, doz.	1 0- 1 6	— C. Mermet	3 0- 8 0
Hyacinth (Roman), doz. bunches	2 0- 4 0	— General Jacqueminot	2 6- 4 0
Lilac, per bunch	3 0- 4 0	— Liberty	5 0- 9 0
Lilium auratum	2 6- 3 0	— Mad. Chatenay	4 0- 8 0
— lancifolium, rubrum and album	2 0- 3 0	Stephanotis, per dozen trusses	4 0- 6 0
— longiflorum	3 0- 5 0	Stocks (double white) per doz. bunches	2 0- 3 0
Lily of the Valley, p. doz. bunches	6 0- 9 0	Sweet Peas, per doz. bunches	3 0- 5 0
— extra quality	9 0-12 0	Tuberoses per dozen blooms	0 4- 0 9
Marguerites, white, p. doz. bunches	2 0- 3 0	— on stems, p, bun	1 0- 2 0
— yellow, dz. bun.	2 0- 3 0	Tulips, p. doz bnch	5 0- 9 0
Mignonette, dozen bunches	3 0- 4 0	— special quality	15 0-18 0
		Violets, 12 bunches	1 0- 2 0
		— special qual.	2 0- 3 0
		— Parma, French, large bunches	2 0- 4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0	Fern, French, doz. bunches	3 0- 4 0
— — medium, bunch	2 0- 2 6	Galax leaves, per doz. bunches	1 6- 2 0
— — short sprays per bunch	1 0- 1 6	Hardy foliage (various), per dozen bunches	3 0- 6 0
— Sprengeri	0 6- 1 0	Ivy-leaves, bronze	1 6- 2 0
— tenuissimus	0 6- 0 9	— long trails per bundle	1 0- 2 0
Adiantum cuneatum, doz. bun.	6 0- 9 0	— short green, doz. bunches	2 0- 3 0
Berberis, per bunch	2 6- 3 0	Moss, per gross	5 0- 6 0
Croton leaves, per bunch	1 0- 1 6	Myrtle, per dozen bunches	3 0- 6 0
Cycas leaves, each	1 6- 2 0	Smilax, per dozen trails	1 6- 4 0
Fern, English, p. dozen bunches	2 0- 3 0		

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Acacia Drummondi, per dz.	18 0-24 0	Cocos Weddelliana, per dozen	12 0-30 0
Ampelopsis Veitchii, per dozen	6 0- 8 0	Cyclamen, per doz.	8 0-15 0
Aralia Sieboldi, per dozen	5 0- 8 0	— extra quality	18 0-21 0
— larger	12 0-15 0	Cyperus alternifolius, dozen	4 0- 5 0
Araucaria excelsa, per dozen	12 0-30 0	— laxus, per doz	4 0- 5 0
Aspidistras, green, per dozen	18 0-30 0	Dracænas, per doz.	9 0-24 0
— variegated, per dozen	30 0-42 0	Erica gracilis, doz.	12 0 18 0
Asparagus plumosus nanus, doz.	9 0-12 0	— hyemalis	12 0-24 0
— Sprengeri, doz.	9 0-10 0	— melanthera	12 0-18 0
— tenuissimus per dozen	9 0-12 0	— Wilmoreana	12 0-18 0
Azaleas, each	2 0- 3 6	Euonymus, per doz.	4 0- 9 0
Begonia Gloire de Lorraine, doz.	6 0-18 0	Ferns, in thumbs, per 100	7 0-10 0
— Turnford Hall,	6 0-18 0	— in 48's, per doz.	4 0-10 0
Boronia megastigma, per doz.	24 0-30 0	— in 32's, per doz.	10 0-18 0
Callas, per dozen	6 0- 9 0	Ficus elastica, per dozen	9 0-18 0
Cinerarias, per doz.	8 0-10 0	— repens, per doz.	5 0- 8 0
Clematis, per doz.	8 0- 9 0	Genistas, per doz.	9 0-12 0
Crotons, per dozen	12 0-30 0	Hyacinths (3 in pot), per doz.	6 0- 9 0
		Kentia Belmoreana, per dozen	12 0-18 0
		— Forsteriana, per dozen	12 0-21 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*).

	s.d. s.d.		s.d. s.d.
Latania borbonica, per dozen	9 0-18 0	Narcissus, per doz.	4 0- 6 0
Lilium Harrisii, per dozen	24 0-36 0	Privet, golden, p.dz.	5 0-12 0
— lancifolium, per dozen	18 0-24 0	Rhododendrons, per doz.	18 0-30 0
Lily of the Valley, per dozen	18 0-30 0	Selaginella, dozen	4 0- 6 0
Marguerites, white, per dozen	5 0- 8 0	Solanums, dozen	6 0-12 0
		Spiræa japonica, per dozen	6 0- 9 0
		Tulips in boxes, per doz. bulbs	5 0- 9 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples :— English, per bush :		Lemons :	
— Californian Newtown Pippin, per barrel	30 0-35 0	— Messina, case	8 0-11 0
per case	8 6-14 0	Mangos, doz.	2 0- 4 0
Nova Scotians, per barrel :		Nectarines (Cape), per box	5 0- 9 0
— Starks	21 6 22 6	Nuts, Cobnuts, per doz. lb.	8 0 —
— Spys	24 0-25 0	— Brazils, new, per cwt.	50 0 —
— Fallawaters	24 0 26 0	— Spanish, p. bag	42 0-43 0
— Wagners	18 0-19 0	— Barcelona, per bag	24 6 —
— Russets	24 0-28 0	— Almonds, p.cwt	34 0 —
— Baldwins	20 0-22 0	— Monkey Nuts, per bag	18 6-19 0
— Ribston Pippin	19 0 —	— Walnuts, dried, cwt.	32 0-35 0
— Blenheim Pip'n	18 6-21 0	—Chestnuts, Italian per bag	13 6-15 0
— Greening	22 0-23 0	— Cocoanuts, 100	10 6-13 6
— King of Tompkin's County	25 0 —	Oranges, Valentia, per case	10 6-24 0
Canadian, per barrel :		— Seville, p. box (2 0)	7 0- 7 6
New York Imperials	25 0-28 0	— Navel	17 6-18 0
— Russets	26 0-28 0	— Jaffa	10 6-11 0
— Greening	27 0 30 0	— Jamaica	9 6-11 0
— Baldwins	24 0 26 0	— Blood	9 0-11 0
Bananas, bunch		— Mandarines, per box (25)	0 8-0 11
— No. 1 quality	7 0 —	— 50	0 10- 1 0
— No. 2 quality	5 6- 6 0	— Palermo, per 100	2 6- 3 6
— Extra quality	10 0 —	— Mandarines (96)	4 0 —
— Giants, per bunch	12 0-14 0	Peaches (Cape)	4 0- 7 0
— Jamaica	4 0- 6 0	Pears (Cape), per case (40)	8 0 —
— Loose, per doz.	0 8- 1 0	— per case (24)	5 0- 7 0
Cranberries, case	13 0-14 0	— Californian, box	11 0-14 0
Custard Apples	3 0- 9 0	— stewing varieties, per ½ bush.	2 6- 3 0
Dates, Tunis, per box	0 4 —	— stewing, crate	8 6- 9 0
— Egyptian, cwt.	20 0 —	Pineapples, each	2 3- 4 6
Grape Fruit, p. box	9 0-11 6	Plums (Cape), per box	2 6- 5 0
Grapes, Alicante, per lb.	1 0- 2 0	Strawberries, lb.	6 0-12 0
— Gros Colmar, per lb.	1 2- 2 6		
— Almeria, per barrel	14 0-20 0		
Lychees, per box	1 4 —		

Vegetables : Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, Green French, p. doz.	2 3 3 6	Mushrooms, Buttons, per lb.	0 8- 1 0
— Ground, ½ bush.	1 3- 1 6	Mustard and Cress, per dozen pun.	1 0- 1 6
Asparagus, per bundle :—		Onions, Valencia, per case	7 0- 8 0
— Paris Green	3 9- 6 0	— Dutch, bag	3 0- 3 6
— Sprue	0 9 0 11	— pickling, per bushel	2 6- 3 0
Beans, French, p.lb.	0 9- 1 4	— French, ½ bag	2 6- 3 0
— Broad, per pkt.	0 6 —	— Spring, dozen bunches	3 0- 4 0
— Flageolet, box	0 11- 1 1	Parsley, 12 bunches	1 6- 2 0
— Home grown, per lb	2 6- 3 0	Parsnips, per bag	2 6 —
— Channel Island	2 6- 3 0	Peas (French flats)	4 3- 5 6
— Madeira, bask.	2 6- 3 0	— per packet	0 5-0 11
Beetroot, bushel	1 0- 1 3	Potatos (new) :—	
Broccoli, per doz.	1 6- 2 0	Canary, cwt.	12 0-14 0
Cabbages, per tally	2 6- 3 6	— French (new), per lb	0 2½-0 4½
— red, per bushel	3 0- 3 6	— Channel Island Kidneys	0 4- 0 5
Chow Chow, p.doz.	1 6- 2 0	Radishes, French breakfast, p.dz.	1 3- 1 6
Carrots, French pad	2 6- 2 9	Rhubarb, per doz.	1 0- 1 2
— cwt., unwashed	1 6 —	Salsafy, p. dz. bdls.	4 0 —
— bag, washed	2 0- 2 6	Savoys, per tally	5 0- 6 0
Chicory, per lb.	0 2½-0 3	Spinach, per bushel	2 0- 2 6
Cauliflowers, doz.	1 6- 2 0	Sprouts, ½ bushel	1 0- 1 3
— Italian Heads, per basket	2 3- 3 0	Sea Kale, p. punnet	0 10- 1 0
Celery, p. doz. bdls.	6 0-12 0	Spinach (French), pad	4 0- 5 3
Celeriac, per doz.	2 3- 4 0	Tomatos :—	
Cucumbers, dozen	4 0- 6 0	— foreign, bundle of 4 boxes	10 0-12 0
Endive, per dozen	1 8- 2 3	Turnips, per doz. bun.	1 6- 2 0
Horseradish, foreign, per dozen bundles	10 0-12 0	— bags	1 9- 2 0
Kale, Scotch, bush.	0 9- 1 0	Turnip Tops, bush.	1 0 —
Leeks, 12 bundles	2 0- 3 0	Watercress, per doz. bunches	0 6 —
Lettuces, French, per doz.	1 0- 1 6		
Mint, per dozen	6 0 —		
Mushrooms (house) per lb.	0 6- 0 10		

Remarks.—Fruit received this week from the Cape include Williams' Bon Chrêtien Pears and Kelsey Plums, both of which arrived in splendid condition. Peaches from the Argentine Republic are also in fine condition, and are carefully packed in trays containing 15, 18, and 30 fruits. Good culinary Apples are scarce and in consequence dear. The vegetable and fruit trade generally is quiet. *E. H. Rides, Covent Garden, Wednesday, February 21, 1906.*

COVENT GARDEN FLOWER MARKET.

The trade in plants shows little improvement, and supplies are still in excess of all demands. Indian Azaleas are now of very good quality, the clear pink and the bright scarlet varieties being in most demand, although good "whites" also sell. Azalea mollis is seen in soft shades of colour, but the demand for these plants is always uncertain. Erica Wilmoreana is now in the market, the plants being fairly well flowered. E. hyemalis are now getting past their best condition. E. gracilis is still very good, also E. fastigiata. Cyclamen are plentiful and good. Supplies of Hyacinths continue excessive, and are disposed of for low figures. Tulips in pots are also abundant, while the stock of these plants grown in boxes is so large that many remain unsold at closing time. Daffodils in pots are good. Boronia megastigma and Acacia Drummondi are seen in various-sized plants. Orange plants in fruit, and others in flower, can be had. Solanums are plentifully berried, and have good foliage. Cinerarias from several growers are very good. A few plants of Deutzia gracilis are seen, but Spiræas have supplanted these plants, so that there is little demand for the old favourite. The Spiræas are plentiful and fairly well flowered; some are, however, of poor quality. Among Ferns are well-grown specimens of Nephrolepis, Piersoni, Asplenium nidus, Davallias, Adiantums, and the usual sorts of Pterises, Cyrtomiums, Polypodium aureum, &c. Trade in these plants is not brisk. Palms in all sizes are well supplied. Some very small, useful-sized plants of Kentia Belmoreana are seen. Aralia Sieboldi is sent in good condition by some growers, but there are other weakly, drawn plants. There is no lack of Asparagus tenuissimus and A. Sprengeri, but not many good A. plumosus.

Cut Flowers.

There seemed a prospect of better trade last week, but things were again quiet all round this morning. The growers are still sending Chrysanthemums. I saw some very nice blooms this morning, but there appears little demand for them. Daffodils, including many of the Barri section, still flood the market. Carnation Madame Therese Franco (syn. Mrs. Leopold de Rothschild) is extensively grown, but the American varieties are fast taking the place of the winter flowering English Carnations. In Roses not many large blooms on long stems are seen. A few fairly good flowers of Kaiserin Augusta Victoria are to be had; also some of Liberty and Bridesmaid, but most of the Roses are only of medium size. General Jacqueminot is coming from several growers, and prices for this variety are low, but after the first crop prices may increase again. In Tulips the double varieties have made the best prices, especially the deep yellow Coronne d'Or, which has been very fine. Crimson, pink and white varieties are all good. A few of the finer sorts of single Tulips have also made fair returns, but generally Tulips have realised far less than did last season's crop. Liliums are in demand. Best quality Callas are plentiful and vary but little in value. In Orchid blooms are seen Dendrobiums, Cœlogyne cristata and Odontoglossum. Freesia refracta is sent by both home and foreign growers. Violets continue very plentiful. Anemone cardinalis and other varieties of the coronaria type are very bright. Mimosa is still plentiful. Roses are imported in fair condition but, with the exception of Safrano, their petals drop soon after being exposed. Ornithogalum (Star of Bethlehem) is now seen. Jonquils and other Narcissus of the polyantha type arrive in large quantities. *A. H., Covent Garden, Wednesday, February 21, 1906.*

TRADE NOTICE.

The Shepherds Bush Exhibition.—We are informed that Mr. John Russell, of Haverstock Hill, N.W., has been entrusted with the laying out of the grounds, and planting of same of the new Exhibition, Shepherds Bush.

ANSWERS TO CORRESPONDENTS.

Books : *L. W.* A single volume of Sweet's *Flower Garden* would not be of much value.

Buttonhole : *C.* We do not know that the term "Buttonhole" as applied by florists can be held to mean only a single flower with suitable relief. Your suggestion that a "gentleman's buttonhole" should not consist of more than one flower is, however, in accordance with the general idea on the matter, and when such a flower as for instance an Odontoglossum is selected, more than one specimen might very reasonably be considered to be superfluous. But that it is difficult to make any absolute rule is apparent when it is remembered that, whilst in the case of the Odontoglossum one flower from a spike is sufficient, if Lily of the Valley be used a whole spike of flowers would certainly be chosen. In drawing up the schedule therefore, it would be best to say "flower or flowers arranged for a gentleman's buttonhole," and leave the judges to determine whether or not individual exhibits are larger or smaller than good taste would approve.

Emigration to New Zealand: *R. H. T.* We have not the means of knowing what are the exact wages obtained by gardeners in New Zealand. Several young gardeners of our acquaintance who emigrated to that colony some 15 years ago have succeeded well. There can be no doubt but New Zealand, with its good climate, offers excellent prospects for young men, whether gardeners or not, of sound constitution, who have a small capital, and who will be content to work at whatever may come in their way. Naturally enough, professions and trades are not specialised to the extent they are here, and it is therefore the "handy" man who succeeds best.

Employment in Private Garden or Nursery: *J. B.* We are not quite sure that we fully understand your question. The conditions of a "head" gardener in a private establishment are not quite similar to those of manager of a market growing establishment, because in the former case he is regarded as a domestic servant, and is therefore subject to the conditions governing domestic servants.

Erica hyemalis: *C. D. H.* Your plants were cut back much too late to flower last season, and everything will now depend upon their condition at the present time They may only require to have the tops taken from the strongest shoots. Under any circumstance they should not be cut back severely. In order to get the plants to flower well they should be grown throughout the summer in the open air in a position where they will be fully exposed to the rays of the sun. Applications of soot-water and a little liquid manure may be made to the roots early in the summer, but such applications must be discontinued after August, or the plants would continue to grow, but fail to flower. Even plants that are well furnished with bloom buds may fail to expand them if improper treatment is afforded after they are taken under glass. Ericas require plenty of light and air, and must be subjected to only sufficient artificial heat to exclude frost. Owing to the prevalence of dull weather many market-growers failed to flower this Erica well last season.

Gardening Situations in America: *W. J. G. and many others.* It was pointed out by *T. E. R.* on p. 84 that no situation can be legally filled by advertising from this or any other country outside the States, or by becoming engaged before landing. If you have sufficient means for the purpose, your better plan is to proceed to some large centre—New York or Boston for preference—and then advertise in the papers, or offer yourself for employment to a nurseryman. According to *T. E. R.*, New York seedsmen are always willing to give advice to young men from this country even though they can offer them no employment in their own nurseries; and he further states that March and April are the best months to arrive there. With regard to the wages of head gardeners and foremen in the United States, they vary greatly, as they do also in this country. They are higher in the States than here, but this advantage is in some measure discounted by the extra cost of living in America. You should be able to judge somewhat from the prices mentioned by *T. E. R.* as paid to journeymen. His letter is certainly encouraging to intending emigrants.' For securing a situation in Canada *H. D.* should advertise in a Canadian horticultural paper, such as the *Canadian Horticulturalist*, whose address is Grimsby, Ontario, Canada. The restrictions covering the question of labour in the United States do not, of course, apply to Canada. Many of our correspondents on this question have enclosed stamps for reply by post; but, as we have stated on many former occasions to do so would seriously interfere with our primary duty of preparing the weekly issues of this journal, and we are therefore obliged to make it a general rule not to reply to such communications except through these columns.

Greenhouse Heating: *V. C., Paris.* Apply to one of the horticultural builders in Paris, who will be much more conversant with the requirements of the district than we can be.

Gros Colmar Grapes: *Grape.* This is a late-ripening Grape, and as such is not generally forced to ripen early, either in private or market establishments. The earliest ripe bunches that we have known were ready about the beginning of August, but fruits could be ripened earlier if desired by applying a considerable amount of heat, and this would probably improve the flavour.

Home for Gardeners: *Excelsior.* There is no home exclusively for gardeners who have become unable any longer to follow their employment. But as you are in a position to pay ten or twelve shillings each week we think it should not be difficult to find a philanthropic institution of a general character that would meet your requirements.

Landscape Gardener: *N. L.* We cannot help you in this matter. Advertise the fact that you require a situation as improver.

[illegible] Wall: *Correspondent.* Scrape off as much as you can by means of an iron or steel scraper, then scrub the wall with vinegar or a weak dilution of sulphuric acid. Do not use the sulphuric acid if there are fruit trees near to the wall, or you will injure or destroy the roots, and mind you do not scald your own hands.

Names of Fruits: *Gardener, Norfolk.* We still think the Apple is of the variety "Sam Young." The specimen you forwarded was compared with others of that variety. The following description of "Sam Young" is taken from Dr. Hogg's *Fruit Manual*:—"Flesh yellow, tinged with green, firm, crisp, tender, juicy, sugary and highly flavoured. A delicious little dessert Apple of first quality." We do not consider this very old variety large enough for market purposes. Twenty dishes were exhibited at the Apple Congress at Chiswick in 1883. Do not plant either Rymer Pippin or Brabant Bellefleur. There are newer sorts equally attractive and of better cropping qualities, and very few nurserymen now stock Rymer or Brabant Bellefleur.—*X. Y. Z.* Pear Bellissime d'Hiver; Apple French Crab.

Names of Plants: *H. C.* Brunfelsia latifolia.—*H. K.* Senecio Petasitis.—*A. L.* Jasminum Sambac, double flowered form.—*X.* Cypripedium Fitchianum (venustum × Hookeræ Bullenianum). The Dendrobium is a variety of Wardianum.—*J. G.* 1, Aralia trifoliata; 2, Kalmia latifolia; 3, Andromeda floribunda.—*J. D. M.* 1, Dracæna nigro-rubra; 2, Dracæna Reginæ; 3. Dracæna hybrida; 4, Dracæna intermedia; 5, Dracæna terminalis. The insects are the common cockroach. The sooner you get rid of them the better for your plants. Use Phosphor paste which is Poison.—*J. P. R.* 1, Abutilon megapotamicum variegated form; 2, Abutilon Savitzii; 3, Reineckea carnea; 4, Ophiopogon Jaburan; 5, Pteris cretica; 6, Acacia dealbata.—*R. E.* Lopezia racemosa, *Bot. Mag.*, t. 254.—*J. S. and Sons.* Rhododendron (probably) Veitchii.

Onion: *W. H. S.* We believe there is no record of the introduction of the Onion to this country. The wild plant is indigenous in central Asia, and probably cultivated Onions were known in Britain in Anglo-Saxon days.

Plants at Kew: *A. T.* The indoor plants in the Royal Gardens, Kew, are cultivated as well as it is possible to have them with the means at present available, and considering the enormous number of species contained in the collection. The commercial growers, and the private gardeners in some instances, are able to devote a whole structure to a single species, or even variety, and are thus enabled to afford the exact conditions that are most suitable for that particular plant. In a botanic garden of such importance and richness as that at Kew this special grouping is generally impossible, for it is only in connection with the cultivation of the smaller decorative plants that frames can be used in any but the early stages of growth. Recognising these important factors, we believe it will be generally conceded that the plants in the houses at Kew are a credit to all concerned in their management, though we cannot assert that they "represent the highest state of culture of which they are capable in this country." It is now mid-winter, but we believe that economic plants in fruit include Oranges, Lemons, Bananas, Guavas, Dates, Vanilla pods, Granadillas and Prickly Pears. Many other economic species, owing to the conditions of cultivation they require, could not be fruited in this country except at very great expense, which is prohibitive. We agree with you that if they could be it would be an advantage. Probably you have heard the statement that it cost the Duke of Northumberland £1,000 to fruit the Mangosteen?

Plants Receiving Injuries from Fumes: *G. H.* The injuries are doubtless caused by the fumes from the heated pipes which have been coated with so many substances. There are only two methods of preserving the plants open to you. (1) Remove them to another house, and freely ventilate this one for a period, or (2) if this be inpracticable employ a little ventilation by day and night, and keep the water pipes sufficiently hot to maintain the temperature needed by the plants. After a time the injuries will cease.

Roses after Grafting: *R. M.* The cause of the scions turning black as described may be due to various reasons. When performing the operation of grafting it is necessary to use a very sharp knife, and the bark of the scion and stock should be made to meet at least on one side. The same angle at which the stock is cut should be reproduced on the scion, that a perfect fit will result between the two, and there will be no space for air. This latter condition is a very necessary one, for an attempt to bring the two surfaces into contact by means of raffia where they did not fit properly would bruise the scion and consequently cause it to become black. Unripened wood or wood which has been injured by frost would, if used as grafts, become discoloured when taken into heat, although to all appearance sound when cut. It is necessary to use firm, hard wood to ensure success at this season, and if it is taken from pot plants, or from plants growing under glass, so much the better. The atmosphere of the frame should be kept close, and be kept at the temperature of 60°. Very little water should be given the stocks whilst they remain in the frame, and when water is necessary each stock must be watered individually from a spouted can, that no more moisture will be caused in the atmosphere than is unavoidable. When the lights are taken off each morning let the glass be wiped dry, and if it is noticed that much moisture has condensed on the glass again before evening, again wipe it dry. Carefully shade the frame from all sunshine, and cover the raffia binding with a little painter's knotting or French grafting wax rubbed on with the forefinger.

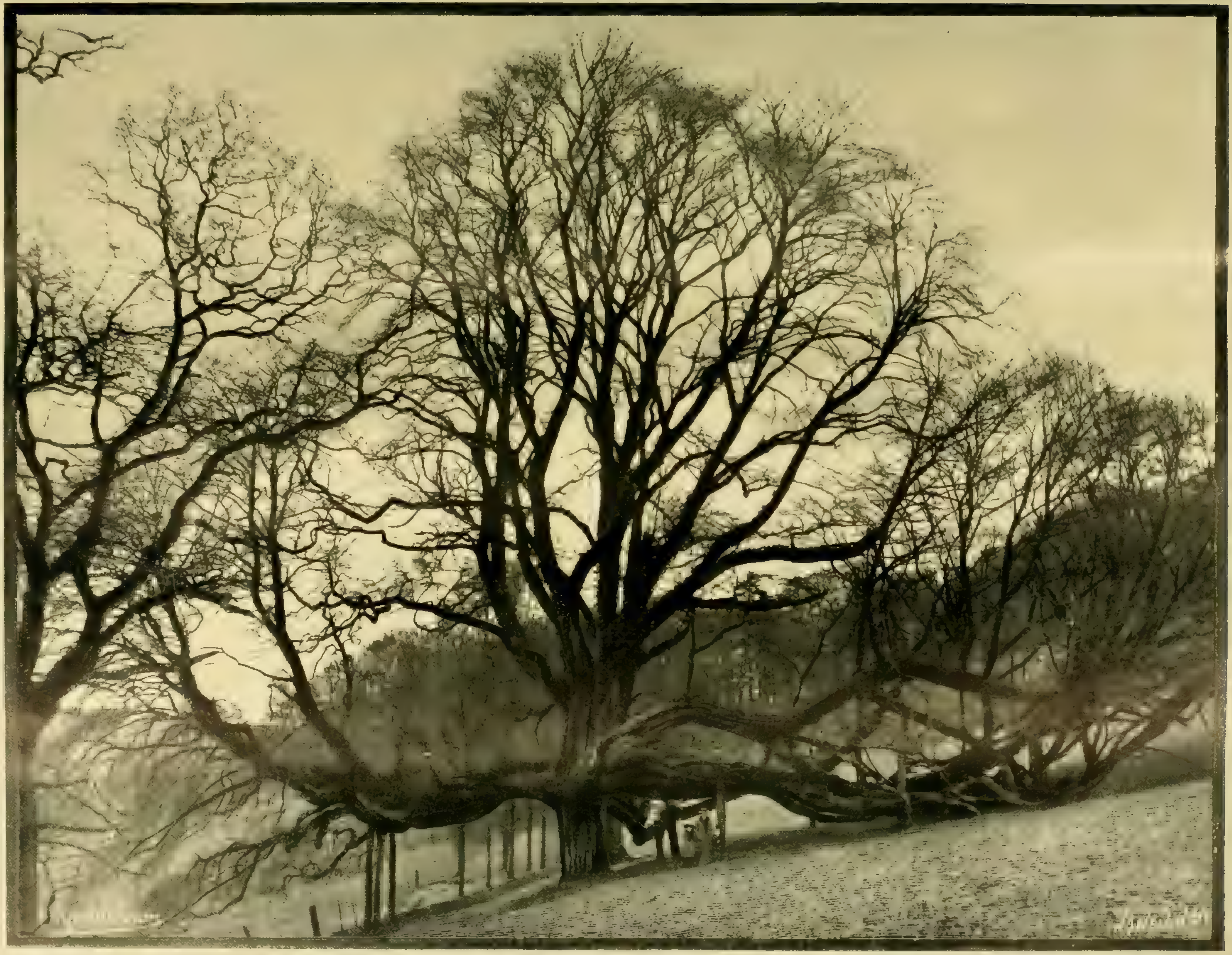
Soot: *Enquirer.* On analysis an average sample of soot will be found to contain 43 per cent. of organic matter, in which is about 5 per cent. of ammonia, 10 per cent. of carbonate of lime, 6 per cent. iron oxide, and 15 per cent. insoluble silicious matters. From some experiments by Johnston and Cameron it was found that 56 bushels of soot mixed with 6 bushels of common salt and sown on an acre of land produced larger crops of Carrots than 24 tons of farmyard dung with 24 bushels of ground bones. Applications of soot to Onions, Asparagus, Celery, Peas and other vegetables have been followed by remarkable success. Few manures are so effective for fruit trees and bushes as soot, and it has been found in practice that hardly any manure has the effect of colouring fruits so highly as a liberal dressing of soot. It forms a capital dressing mixed with leaf-mould for impoverished lawns when moss is prevalent. For outdoor work soot should always be applied during damp weather. The most important conditions in regard to soft-wooded plants are the provision of a suitable medium for the formation of roots, with abundance of moisture, but without stagnation. Hence it is that many of the successful propagators use soil only in the lower portions of the cutting-pot, the upper part being filled with clean sand. To the soil previous to use may be added 2 lbs. of soot to a bushel of loam; this will be conducive to health and vigour of root-growth. A little bone-meal may also be added. As soot contains so large a proportion of carbonate of lime, a direct application of quicklime is never necessary or advisable when soot is used.

Teak: *U.* We do not know of any special work on this subject.

Twin Tulips: *R. W. R.* The appearance of more than one flower on the inflorescence of Tulips is not uncommon. Both are derived from separate growths, but fusion takes place later, resulting in an apparently branched peduncle. If you make a transverse cut of the stem at the point where the flowers branch you will clearly see indications of the two stalks.

Violets Diseased: *Anxious.* Your plants are attacked by the disease so prevalent among Violets at the present time. It is caused by a fungus—Ascochyta violæ. If your plants are badly affected, the better plan is to burn them and plant new healthy stock obtained from a distance. Choose a fresh site in the garden for the new plantation. If you do not wish to destroy the old beds try spraying with potassium sulphide. Use 1 oz. of the chemical to 3 gallons of water, and apply at intervals of a fortnight. See our issue for November 5, 1904, p. 328.

Communications Received.—A. F. G. (many thanks, we cannot return to the subject of the rainfall in 1905).—W. H. L.—R. A. R.—W. C.—W. & S.—F. R. S.—Dr. Christ, Basle—C. H. P.—H. J. V. We cannot give you the address required.—Will T.—E. M.—W. H. C. (Many thanks).—W. F.—J. Wallis (Many thanks).—W. H. W.—M. C. A.—A. G.—C. F. B. (Thanks, we do not publish a gardeners' directory).—M. B., Middelburgh.—A. G.—H. J. V.—J. H.—O. T.—G. N.—J. T. B. P.—C. G. S.—L. C.—F. K. S.—W. & S.—A. E. J. R.—G. W.—E. P.—W. G.—F. W.—G. H. H. W.—E. H. W.—V. H. L.—C. T. D.—E. M.—W. C. G. L.—L. Gentil.—W. B. H.—K. & Sons.—W. C.—H. W.—T. C.—G. W.—F. T. B.—H. J. C.—R. B. P.—W. Cuthbertson (next week)—J. W. M. (next week)—H. M.—Secretary, Royal Meteorological Society.



Wych Elm, at Sharpham, Totnes, Devonshire.
Height, 80 ft.; Girth, at 6 ft. from the Ground, 18 ft.; Longest Branch, 104 ft.
The whole covers one-fourth of an Acre.

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POTATOS.

AMID the piles of picked Potatos which were displayed by Messrs. Sutton at the Royal Horticultural Hall a short time since, there was a little glass case whereon reposed, like so many gems in a jeweller's shop, a collection of tiny tubers which might well have been overlooked by the indifferent spectator. The picked samples were for the public eye—they represented what has been accomplished; they appealed to the cultivator, they aroused the attention of the consumer. But the "gems" reposing on their velvet cushions had a different value. They were the forerunners of what is to be; they attracted the attention of the botanist, they whetted the curiosity of those interested in the progress of the Potato; they excited the hopes of those who are on the look out for a Potato which shall prove more or less immune to the attacks of the Potato disease. Already by the production of Discovery Messrs. Sutton have made a great advance in this direction, and they may do more. By the courtesy of Messrs. Sutton we are enabled to give representations of some of these treasured tubers, drawn for us by Mr. Worthington Smith. The first we shall mention is the fir-cone Potato, fig. 49, which is a mere curiosity, but a very interesting one, as proving to the ordinary observer what has been always known to the botanist that the tuber is merely a shoot, just like any other shoot except in its subterranean habit and its thickened fleshy consistence. Gardeners speak of the tubers as "seeds," though, of course, such an epithet is as incorrect as is the use of the word "apple" to denote the fruit or berry, which has absolutely no resemblance whatever to an apple. The fir-cone Potato, with its thickened leaf-scales spirally arranged, is obviously nothing more nor less than a leaf-shoot, every bud or "eye" of which, if detached, might serve to propagate the variety. This Potato is not only curious to look at and interesting morphologically, but it is of good flavour when cooked. The colour of the tubers varies.

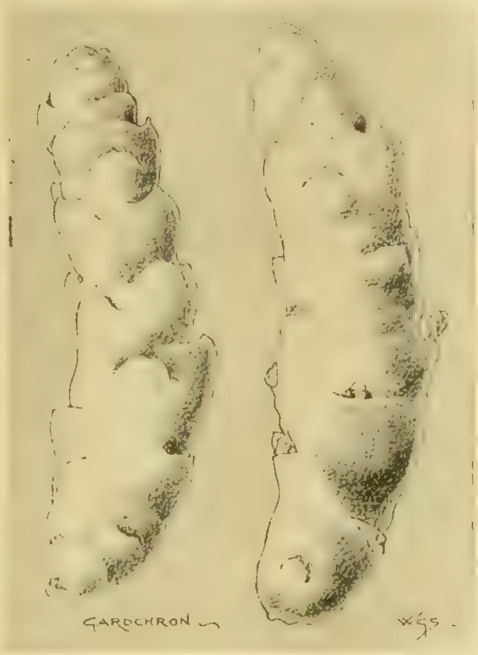

FIG. 49.—EXAMPLES OF THE FIR CONE POTATO.

The tuber marked "tuberosum" in the upper left-hand corner of fig. 50 shows what the original Potato was like, and is interesting to compare with the Magnum Bonums and Sir John Llewellyn of our present time. Next to it a tuber of Solanum Maglia, a Chilian species, growing naturally in damp places. The tubers are sub-globose, deep purple-skinned, with sunken eyes. In August 1886, when we first saw this species at Reading, we noted a tendency to revert to the wild condition, and to the formation of stolons of considerable length, tuberous at the end, or, in other cases, upturned, and producing a tuft of leaves.

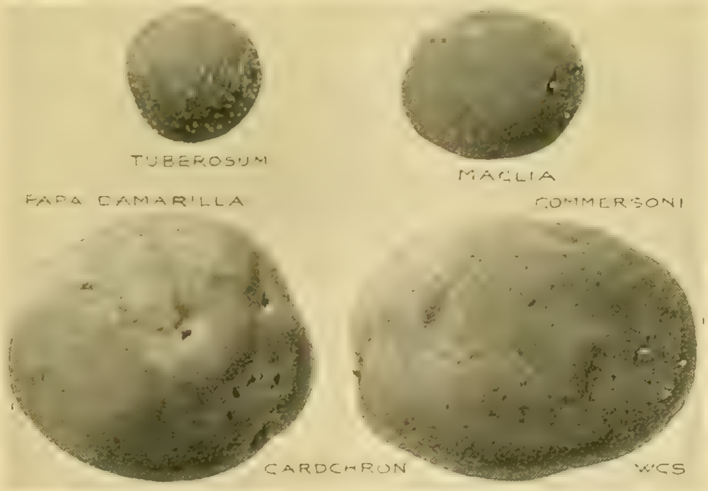

FIG. 50.—SPECIES OF POTATO.

There seems little doubt that S. Maglia is the parent or one of the parents of our ordinary Potato. Messrs. Sutton have succeeded in effecting a cross between this species and an ordinary Potato.

The globose tuber labelled Papa d'Amarilla came originally, we believe, from the neighbourhood of Lima. It is a yellow-fleshed variety of delicate flavour, and in the hands of Messrs. Sutton we may look for some remarkable developments in the future. We have not seen the haulm or the flower. We may here mention that whilst the haulm and the foliage are very variable, and consequently of little value for purposes of determining one species or variety from another, the flowers, and especially the calyx segments, are much less subject to variation, and thus offer better differential characters. The last figure, in the lower right-hand corner of our illustration (fig. 50), represents a tuber of S. Commersoni, a distinct species which has been in cultivation for some time. It has lately attracted attention from the statement made by M. Labergerie that from this yellow-skinned variety he has obtained a sport of large size and the skin purple. Messrs. Sutton showed, side by side with some tubers of M. Labergerie's variety, some of the variety known as Blue Giant, and not even the experts could distinguish any difference between the two sets of tubers as shown. That there may be differences in the manner of growth, haulm, &c., is quite conceivable, indeed good witnesses affirm that there are such differences, so that the matter must for the present be left open. Other Potatos exhibited in this group were the Black Congo, in which both skin and flesh are of a rich purple colour. This is described as excellent in flavour, and is used in salads like beet-root, for ornamental purposes. Whether the Potato, as we now know it, originated from one species like S. Maglia or whether, as M. André thinks, several species have concurred in its production, is a matter that cannot with certainty be determined at present, but the experiments made with so much care by Messrs. Sutton for so many years may very likely lead to the solution of this and other problems connected with the Potato, whilst their value from an economic point of view is already incontestable.

NEW AND NOTEWORTHY PLANTS.

ALOE LAXIFLORA, N. E. BROWN (*N. SP.*).

THIS new Aloe belongs to the same group as the well-known A. ciliaris, A. tenuior, and A. striatula, to which latter it is perhaps most nearly allied and similar in habit. It was sent by Mr. F. G. Griffiths, of Port Elizabeth, Cape Colony, in 1897, to Kew Gardens, where it flowered in December, 1902. Its distinctive features are the very lax arrangement of the flowers, horizontal bracts and pedicels, and long, vertically pendulous perianth, with brownish margins to the inner segments. The leaves, too, although straight in their general direction, are yet slightly but distinctly sinuous, both laterally and vertically, in their upper part, in a manner difficult to express in words.

Stem of the Kew plant about 4 feet high, erect, about ½ inch thick, leafy along the upper 2 feet. Leaves very lax, ½-1 inch distant, 4½-10 inches long, ½-1⅓ inch broad at the base, ⅛-⅙ inch thick, almost horizontally spreading, nearly straight, neither deflexed nor recurving, of nearly equal breadth almost to the middle, then gradually tapering to an obtuse, denticulate apex, slightly sinuous at their upper half, soft, concave above, except at the flat base, convex beneath, rather dull deep green, without spots, not in the least glaucous. On the upper side of the basal part near one margin are usually one or a few minute tubercles in a line, none on the underside; marginal prickles minute, ⅓ line long, ½-1½ line distant, cartilaginous, white, numerous, almost obsolete near the apex; sheath quite entire, indistinctly marked with green lines. Peduncle simple, erect, about 16 inches long, ⅙ inch thick, naked below the flowering part, two-edged at the base. Flowers 20 to 30, in a very lax raceme, 3-4 inches long, 1¼ inch in diam. Bracts 2 lines long, ¾-1 line broad at the base, where they embrace the pedicels, thence tapering to a very acute point (deltoid-acuminate), horizontally spreading, pale brownish-white, submembranous. Pedicels 4 lines long, horizontally spreading, green. Perianth vertically pendulous, 1⅓ inch long, 2½ lines in diameter at the base, and slightly less at the apical part, trigonous, straight, orange-red on the basal ⅔, light yellow on the apical part, with a greenish keel to the outer segments, and a sienna-brown margin to the inner ones; tips of the segments erect, not at all spreading, obtuse, the outer slightly hooded. Stamens just reaching to the mouth of the perianth; filaments pale yellowish; anthers with reddish-brown margins, pollen yellow. *N. E. Brown.*

THE ROSARY.

RELIABLE ROSES.

AT this season of the year, when Roses are being carefully selected by cultivators to add to their collections, it is of the highest importance to know what varieties are best suited for garden cultivation. For it cannot be denied that Roses which are brilliantly successful at our annual exhibitions are not always best adapted for the special purpose to which I have just referred. Such varieties, for example, as Mildred Grant, Alice Lindsell, and Mrs. Edward Mawley, from which great achievements, or, at least, very considerable artistic effects might naturally be expected, I have found most disappointing when compared with many of their much less renowned predecessors and contemporaries. I much regret to say that most modern Roses, where weighed in the impartial balance of ordinary garden culture, are found terribly lacking in effective floral capability. There are, however, outstanding exceptions, and Florence Pemberton—perhaps the very finest of modern introductions—is one of these. This, in my estimation, is the grandest Rose that has come to us from Newtownards since the beauty and luxuriance of Margaret Dickson first dawned upon the horticultural world. It has the same marvellous capability of growth, and nearly as great a profusion of exquisite bloom. Dean Hole and Lady Ashtown I have not found quite so accommodating to our somewhat variable Scottish climate; I find them occasionally eulogised by fervent English cultivators; but I can only say that, even under the most favourable atmospheric conditions during last summer they did not succeed. It was only by the most careful attention, indeed, that I could induce them to grow in situations where oldet Roses of greater vitality have grown and flowered admirably for the last ten years. Nor was I very successful, notwithstanding all my efforts, with Earl of Warwick and Countess Cairns; but as these, and some of the Irish Roses to which I have alluded were planted somewhat late in the season, I anticipate that they will be much more effective this year. I have good hopes of Charles Grahame, Countess of Annesley, J. B. Clarke, and my fragrant namesakes from Newtownards and Waltham Cross, the former of which was quite a success last season, even when planted in somewhat too shady situations.

But as I have perhaps sufficiently indicated, the most reliable Roses, with one or two notable exceptions, are to be found chiefly among the older varieties; and are for the most part either Hybrid Perpetuals or Hybrid Teas. Margaret Dickson I have already eulogised as a magnificent garden Rose; Clio, one of the many beautiful varieties raised by the late Mr. William Paul, is equally fine. I may perhaps add that these two varieties are among the most aspiring climbers I possess; here the former rivals, if not transcends, its Australian and American aspirations, attaining on the walls of this manse to a height of nearly 13 feet. Another Hybrid Tea of remarkable achievement in this direction is Caroline Testout, one great plant of which, climbing up a venerable Apple tree, produces enormous blooms at an equally commanding elevation. Viscountess Folkestone, La France, Clara Watson, Papa Gontier, and Madame Pernet Ducher are also vigorous growers, which, unlike some of our modern varieties that require to be grown by the hundred for exhibition, can always be relied upon to produce splendid floral effect in the garden. Such glorious Roses as these will not soon be superseded, for they are immensely superior to any of their successors. Nor do I hesitate to assert that even among the so-called Hybrid Perpetuals the older varieties are unquestionably the best. Duke of Edinburgh, Charles Lefebvre, Duke of Teck, and Horace Vernet—such venerable Roses as these will not easily be surpassed, though doubtless some grand crimson varieties have recently been introduced, such as J. B. Clark and Charles Grahame.

Many of the finest Noisettes and Teas, notably the far-famed Marechal Niel (the queen of the Conservatory), are, chiefly owing to the possession of a delicate constitution and an intense susceptibility to atmospheric influences, wholly unsuited for garden cultivation. Among the most reliable for this special purpose are Madame Alfred Carrière, a sweetly fragrant and profusely flowering Hybrid Noisette; Madame Pierre Cochet, a lovely derivative from Wm. Allen Richardson; Bouquet d'Or, an exquisite daughter of Gloire de Dijon; Anna Olivier, Devoniensis, Papa Gontier, Corallina, and Enchantress, a charming hybrid between the Chinas and the Teas; Souvenir d'un Ami, and Souvenir de S. A. Prince.—*David R. Williamson, Wigtownshire*

NOTICES OF BOOKS.

THE FRENCH FLORA.

M. Léveillé has recently published a pocket flora of France, which will be very serviceable to tourists and others. The plants are arranged in analytical tables in which a series of alternatives are presented to the enquirer. By continuously selecting the appropriate alternative, and eliminating the other, the student is, with the plant before him, by the exercise of patience, gradually led to the determination of its name, having incidentally picked up on the way a great deal of information relating to the plant itself. Of course, if the student has a good knowledge of the natural orders to begin with, his labours are rendered much less irksome. We notice in this volume that even the minor sub-divisions of the genus Rubus are thus analysed; various directions as to the collecting and preservation of specimens are given, whilst a glossary and an index complete a very useful little publication. It is published by M. Charles Amat, 11, Rue Cassette, Paris, and may be had from Messrs. Williams and Norgate.

THE BOOK OF THE WINTER GARDEN. By D. S. Fish. John Lane.

The object of this little volume is to call attention to those hardy plants which flower in the winter, or which from the form and colour of their foliage are conspicuous in the winter season. The author passes in review the principal "berried" trees and shrubs, the winter-flowering shrubs, shrubs notable for the colour of their bark, and plants suitable for winter bedding. Another chapter deals with herbaceous plants flowering in the open in winter and early spring. The Alpine house next receives attention, and, considering the small expenditure of time, trouble, and expense that it demands, it is surprising that it is not more often met with. Mr. Fish's directions for its management are simple and to the point, and will, we hope, induce many to take up a department of gardening specially suitable for amateurs and those with little space at command. The latter half of the book is taken up with details relating to the plants that produce their flowers under glass during the winter months with the aid of a little artificial heat. It is surprising to see how many plants there are which will follow on after the Chrysanthemums are past their best. The book is illustrated with several appropriate photographic reproductions, and has an index. When a second edition is called for, greater attention should be given to the names of plants and to the reading of the proofs. At p. 3 the author, alluding to artificial light, is made to say the exact opposite of what he intended. Mr. Fish's book will be serviceable as a reminder to many, and will furnish valuable hints to the inexperienced.

ORCHID NOTES AND GLEANINGS.

LÆLIA × NEMESIS, "TRING PARK VARIETY."

(L. anceps white variety × L. superbiens.)

A VERY interesting hybrid raised in Tring Park Gardens from a cross effected by the Hon. Walter Rothschild, M.P., is flowering in the collection of the Right Hon. Lord Rothschild. In the early stages the plant very closely resembled Lælia anceps, even the growth made before the flowering pseudo-bulb appeared being exactly like a white Lælia anceps. From it proceeded two growths, one of which, with one leaf, closely resembled Lælia anceps, while the other, with two leaves, closely resembled Lælia superbiens. In the flowers the characters of L. superbiens are the most apparent, especially in the strong, wavy purple ridges extending down the lip. The inflorescence, which is 3 feet 6 inches high, bears 3 flowers, each 6 inches across. The sepals and petals are silver-white, delicately tinted with light rose colour, darkest on the outer halves of the segments. The margins of the side lobes and the broad front lobe of the lip are of a bright shade of rose purple colour. The base of the lip is white, with numerous narrow, dark purple lines extending into the side lobes; the disc is bright yellow with five raised wavy-edged keels, along the edges of which a dark purple line extends. It appears to be very floriferous, and in that and other respects it is a marked improvement on Lælia superbiens. The original form was raised by De B. Crawshay, Esq., Rosefield, Sevenoaks, between L. anceps Crawshayana and L. superbiens.

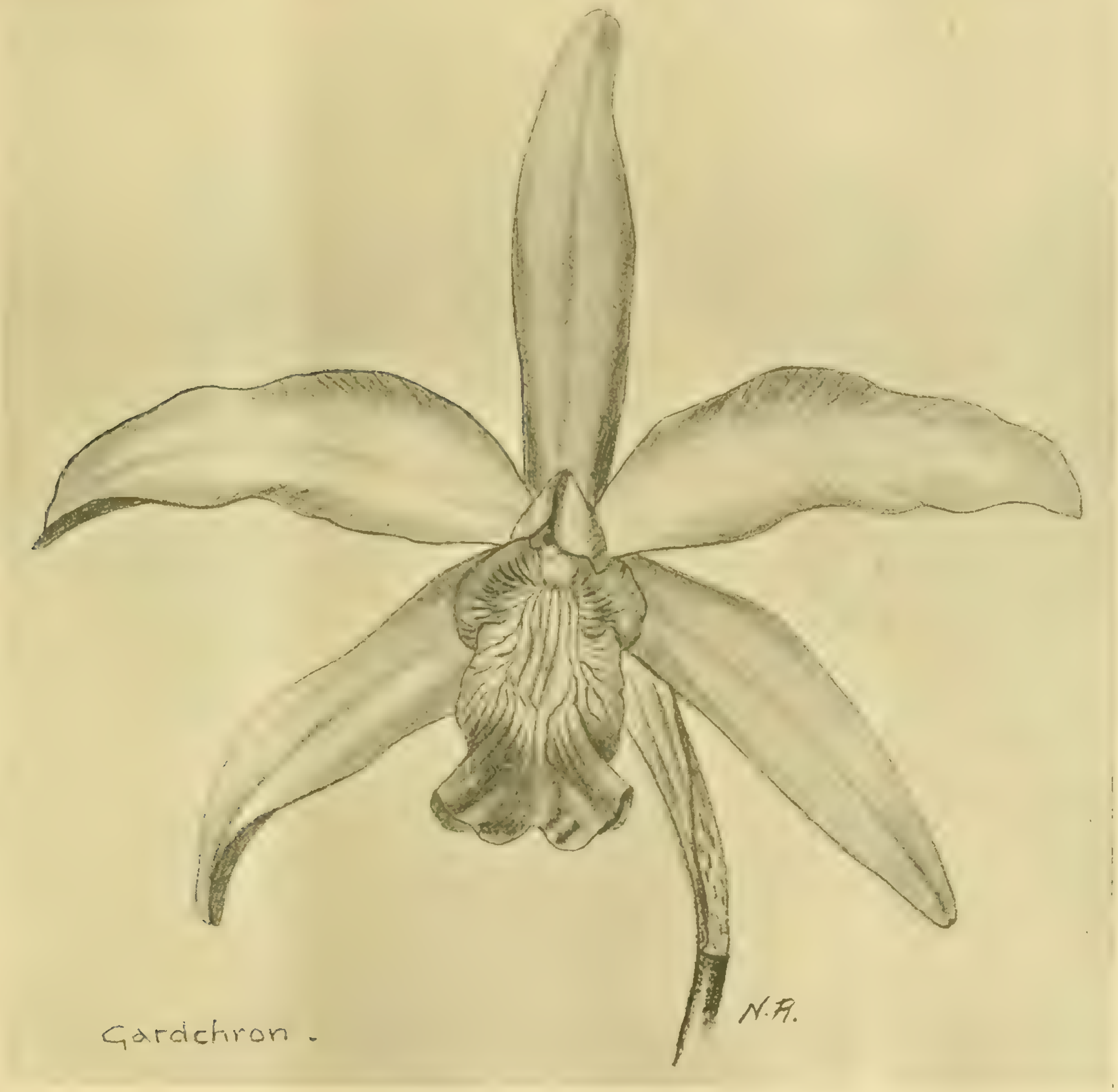

Fig. 51.—Lælia × Nemesis, "Tring Park Variety."

ORCHIDS AT THE GRANGE, SOUTHGATE, N.

It has been my privilege to visit a large number of large and small Orchid collections at home and on the Continent, but seldom have I inspected such a choice and healthily grown collection as that belonging to J. Bradshaw, Esq., at "The Grange," Southgate. Like many another gentleman who commenced in a humble way, and being content for a time with Orchids simply because they were Orchids, the above-named cultivator has now reached the stage when nothing but the best of the different species and hybrids therefrom will satisfy him. The consummation of this desire, however, requires considerable assistance from an obliging banker, but when, as in the present case, the cultivator is more than ordinarily successful in growing and propagating the plants, it is, in most instances, a profitable investment, as well as a pleasurable indulgence. The collection principally consists of most that is good in three or four genera, and is contained in several houses divided into half a dozen compartments, each and all well situated to receive the full benefit from sunlight.

On entering the first compartment the feeling peculiar to a well organised Orchid house was borne in upon me, and afterwards it came as no surprise to find that in each structure the inmates were almost without exception in the pink of health. This is largely attributable to having the paths and floors beneath the stages made up of such porous, clean, and yet moisture-holding material as coal ashes, also to the provision of ample hot water piping, and efficient means of ventilation. In this first division are many of the fine forms of Cattleya labiata that were exhibited at the Royal Horticultural Hall last autumn, and the grand series of white-segmented varieties which are such a feature in this collection. Of the latter section there are no fewer than forty-five healthy plants, many of which have been certificated, notably C. l. G. G. Whitelegge (award of merit, October 29, 1901), and C. l. glauca, given an award of merit on the same date. Just prior to my visit they had all been set in order for the coming growing season, evidence of an early start being even then visible in some. Following the above are a couple of dozen plants of Cattleya × Mantini, C. × Mrs. J. Whiteley, and C. × John Bagguley, these derivatives from C. Bowringiana being greatly favoured and exceedingly well grown, one particular plant having over half a dozen leads.

The main Cattleya house was next entered, where my attention was first directed to a large batch of C. Trianæ, several of which were in flower. The first to claim attention was the one which, since my visit, was accorded (on February 13) the Orchid Committee's 1st diploma for the best C. Trianæ shown. It is aptly named C. T. The Premier. It is represented here by two strong plants, the one then in bloom having a massive flower almost eight inches in diameter, the sepals being an inch and a half in width, and the petals three and three quarters, the whole flower being of a beautiful shade of rose purple colour. The lip is large, and has a deep orange coloured throat, a bright purple front lobe, and delicately white, frilled margin, altogether a surprisingly perfect flower. Another good form in bloom was C. T. Mrs. de B. Crawshay, an almost perfectly round flower, with very broad petals and highly coloured lip. A white form—of which there are many present—in flower is named C. T. albo-violacea, the segments being white, and the front lobe of the lip of a pale violet tinge. Amongst the many notable varieties particularised was a thriving plant—part of the original old and distinct form known as C. T. Leeana, which gained a F.C.C. so long ago as March 25, 1884. An excellent example of C. Schröderæ alba, thirty vigorous pieces of C. intermedia alba, a dozen or more of C. Skinneri alba, C. Percivaliana alba, and other "albinos" were admired. The central stage is filled with a number of fair sized specimens of many of the more showy Cattleya and Lælio-Cattleya hybrids, several being instanced as being the original plants, and all of superior merit. The chaste flowered L.-C. Digbyano-Schröderæ-alba which gained an award of merit on April 5, 1904, is doing well. L.-C. Haroldiana John Bradshaw, given a F.C.C. on October 27, 1903, is probably the finest variety of this gorgeous hybrid yet seen. Many other specialities were pointed to with evident pride, but considerations of space precludes their enumeration. The north side of the central stage is given up to a very fine batch of Phalænopsis grandiflora, known as Rimestadtiana, which from the bristling spikes give promise of a good show of flowers later on.

Dendrobiums are not favoured here, yet two well-flowered examples of D. splendidissimum grandiflorum, and another of D. nobile Cooksoniæ, gave a touch of colour to the sombre green of the Cattleya foliage. Another species, more modest than the above two, viz., the new and rare D. bellatulum, bore a couple of its quaintly coloured blooms. The north side stage is occupied with such species as C. Mendeli, Mossiæ, etc., whose qualities lie more in their merit than in their flourishing condition, though given a few more years of their present treatment and that reproach will be removed, as is evidenced by a couple of twenty-year-old plants of C. Mossiæ Wageneri, which had reached a very low standard of health, yet have now so far recovered as to be allowed to carry sheaths. The roof is not much obscured with hanging plants, but several nice pieces of L.-C. Ingrami and Lælia anceps Sanderiana are suspended over the path.

A third compartment is a span-roofed structure, the south side stage of which is filled with green leaved, massive-bulbed plants of Lycaste Skinneri, a large number of which were in flower at the time of my visit. It came as a complete surprise to me to find such a collection of this somewhat neglected species, and as nothing but the best are included, it was indeed a feast. L. S. Enchantress is a magnificent form, with large solid blush white flowers, as also is L. S. Lady Gladys, which gained an award of merit on December 17, 1901. Fourteen plants of L. S. alba were in flower, some of which carried nine glistening white blooms. A large plant of L. × Balliæ bearing eight flowers, large in size and highly coloured, also commanded admiration. The opposite stage is occupied by some very healthy plants of Cymbidium Lowianum, C. Tracyanum, C. eburneo-Lowianum, with five developing spikes, C. Ballianum sending up a strong scape, and in flower, a plant of the rare C. Wiganianum (C. Tracyanum × C. eburneum); other plants present being some good masses of Maxillaria Sanderiana, etc., and overhead some resting plants of Odontoglossum citrosmum. Squeezed between this range and the Odontoglossum house are two small houses, one of which is devoted to the propagation of offshoots from the special Cattleyas and Lælias and hybrids, and the other is partly filled with an importation of Cattleya Trianæ numbering over a hundred plants, all except two of which are guaranteed to be white. What a speculation!

The Odontoglossum house is a long, narrow, span-roofed structure, fully exposed to the sunlight during the long dull season, but amply provided with shading appliances when the occasion demands. That this is the proper position for an Odontoglossum house, or any other Orchid house for the matter of that, is evidenced by the massive bulbed, strong, bronzy-green foliaged plants inside, and also by the vigour of the pushing spikes, as well as by the thick substanced and highly coloured blooms of those plants in bloom. Better plants no one could wish to see, and now the fact of their successful cultivation is assured, Mr. Bradshaw is replacing those of inferior merit with more costly specimens. A good commencement has already been made, as is seen by some grand pieces of O. Harryano-crispum, Harryano-triumphans The Queen, recently given an award of merit, O. × Bradshawiæ (O. Andersonianum × O. Harryanum), given a first-class certificate on January 27, 1903, O. excellens Lowiæ (award of merit, April 27, 1894), a very pretty O. × Rolfeæ named Kathleen, an almost white form, and a form of O. × ardentissimum, spotted in the way of the well-known O. crispum Starlight.

Several grand spikes of O. triumphans carrying numerous highly coloured flowers were next admired, along with some O. × Adrianæ, O. × Ruckerianum, and several dozen spikes of good ordinary O. crispum, not forgetting a fine plant in flower of the new O. × Wiganianum (O. × excellens × O. Rolfeæ). O. luteo-purpureum and O. Hallii were showing numerous flower-spikes, and in most instances, where sufficiently advanced, two spikes from each bulb were seen on the O. crispum. Hard work, high aims, tireless energy, with a consistently correct cultural policy, backed by an enthusiastic and encouraging master, have gained for Mr. G. G. Whitelegge, the gardener, such a large measure of success as I have only faintly described. *W. H. Young, East Sheen.*

TREES AND SHRUBS.

PINUS INSIGNIS, OR PINUS RADIATA.

In a note in the *Gardeners' Chronicle* for December 23, 1905, "H. W.," Trewince Gardens, remarked that the specimen illustrated on page 435, which is 75 feet high and has a girth of 12 feet at 3 feet from the ground, is the largest of that species that he knows. There are several finer trees than this in the Pencarrow collection. The tallest is 97 feet 6 inches high, and measures 14 feet at 5 feet from the ground. This tree has a magnificent trunk, but, unfortunately, it has got up into the wind zone, and the upper branches have suffered. Another tree, which is a perfect specimen, is 88 feet high, and its girth 15 feet 6 inches at 3 feet, and just a foot less at 5 feet from the ground. This is the finest example of the Montery Pine that I have seen, although I have heard of even finer ones elsewhere. Both of these trees were planted in 1844. Two others, planted in 1849, are very beautiful specimens, 69 feet high, girth 14 feet 6 inches, and 70 feet high, girth 17 feet 7 inches at 5 feet up. They are well furnished with lustrous foliage and clothed to the ground.

The Monterey Pine is so generally known as Pinus insignis that it is a great pity Mr. Kent, in the 2nd Edition of Veitch's *Manual of the Coniferæ*, has tried to depose this name in favour of the lesser known P. radiata; and is it not quite possible that the name radiata was given to a tree which differs in some particulars from the general form of P. insignis? Sir William Molesworth, who founded the Pencarrow Pinetum, bought trees in 1844, and again in 1849, as P. insignis. Later, in 1851, he bought as a distinct species a pine under the name of P. radiata. I do not know from whom it was bought, but the bulk of the trees which he planted at that period were bought from Knight and Perry, the predecessors of the Chelsea firm of Veitch and Sons.

This P. radiata is growing in the avenue, and throughout his lifetime Sir William is said to have made a point of stopping his carriage every time he returned to Pencarrow to examine this tree, which he greatly valued. He had planted P. insignis seven years previously to this P. radiata, which he bought as a distinct and rare tree. Of its characteristics as a young tree I know nothing; but at maturity it differs in many respects from P. insignis. It is a flat-topped tree, with nearly horizontal branches; the lower ones are very long, making the tree unusually broad at the base, whereas P. insignis has a more or less rounded top; the bulk of the branches are ascending, and the broadest part of the tree is at a point nearly half-way up. The leaves of P. radiata are of a paler green than those of P. insignis. The cones are smaller, rounder, and more prickly. When mature they are more uniform in colour, which is a very light shade of brown. I feel inclined to say that the cones of P. radiata are also paler than those of P. insignis, but on even the same tree of the latter one finds extraordinary variation in shades of colour.

As "H. W." remarks, the cones of P. insignis—and this applies to both forms—are remarkably persistent; some on the trees here must be more than 30 years old. I have opened many cones, but have found only a small proportion of good seeds. Neither of the two forms here are "spring-tender," but I find that young trees continue to grow till very late in the autumn, and the soft growth is very susceptible to injury from the fierce gales for which Cornwall is noted. The Monterey Pine is a moisture lover, and I am inclined to the opinion that it suffers most from the Pine-beetle, Hylurgus piniperda when growing in a dry situation. It should only be planted on mounds where the rainfall is very heavy—our average of 46 inches does not appear to be too much—or where the land is low and flat. The growth of young trees is very rapid. Seedling trees frequently make shoots 3 to 4 feet long. Although of no great timber value, an occasional tree in a mixed plantation greatly increases its beauty. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

A NEW HIMALAYAN SPRUCE.*

Mr. Rehder described in 1903 a new species of Spruce, Picea morindoides, from a specimen which is growing in the arboretum of M. Allard, at Angers, in France. This Spruce strongly resembles in habit Picea morinda, having similar pendulous branches. It is, however, entirely different, as the leaves, which are shorter than in that species, bear bands of stomata on their dorsal [? ventral] surface only, and show that the species belongs to the section Omorica. In fact, this Spruce is very closely allied to P. Omorica and to P. Breweriana. M. Rehder knew nothing of the origin of M. Allard's Spruce; but it is evident now that it must have been raised from Himalayan seed. In 1877 a native collector found in Chumbi, between 9,000 and 10,000 feet, a Spruce, which is identical with the Angers tree. It was lately again collected by Mr. E. H. Walsh, who accompanied the late military expedition to Tibet.

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* In Sargent, *Trees and Shrubs*, I. 95, t. 48.

The occurrence of a Spruce belonging to the section Omorica in the Himalayas is of the highest interest. In its restricted habit, occurring only so far as is known in Chumbi, the new Spruce resembles the Servian Spruce and Brewer's Spruce.

Seeds of this Spruce were sent to various botanical establishments in Europe in 1877 or 1878 by Sir George King; and it is possible that other examples of it occur in cultivation on the Continent or in this country. As it strongly resembles Picea morinda in habit, it may be confused in collections with that species. The writer would be much obliged if owners of reputed Picea morinda would kindly examine any trees of that name which differ in having short flattened leaves, conspicuously marked with white bands on the dorsal surface (simulating in appearance a silver Fir) and send specimens for identification, with particulars of the height and girth of the tree, and the provenance of the seed, and date of planting. *Augustine Henry, Kew.* [Among Mr Wilson's Chinese specimens are flat-leaved Spruces which will be described later on. *M. T. M.*]

PORTRAIT OF JOHN EVELYN, WHO DIED 200 YEARS AGO LAST TUESDAY.

JOHN EVELYN.

Among the pioneers of scientific horticulture, John Evelyn held a foremost place in the troubled reign of Charles I., and in the not altogether creditable reign of his successor. Evelyn was a good example of a learned, a genial, and a practical country gentleman. He died on February 27, 1706, just two centuries ago. In spite of much that was humiliating in the reign of Charles II. there was an awakening, and a real progress in literature, in art, and in science, and it is only right that the "merry monarch" should have the credit of having fostered and encouraged the movement. In 1662 the Royal Society was definitely incorporated. John Evelyn was one of the Fellows, and he had among his colleagues Christopher Wren, Nehemiah Grew, Samuel Pepys, and others. Evelyn makes mention of the first anniversary meeting on St Andrew's Day, November 30, 1663. To the general public Evelyn is best known by his charming Memoirs, a singular contrast to that of his contemporary Pepys. But interesting and valuable as that publication is, his papers contributed to the Royal Society have had more far-reaching effects. His famous "Silva" first saw the light in the shape of a contribution to the Royal Society, and it was, as he tells us, "the occasion of the propagation of many millions of useful timber trees." His *Gardeners' Kalendar* (1666) was scarcely less influential. In our Volume for 1895 (November 16 and December 28) is an exhaustive article on Evelyn and his work by Mr. W. Roberts, to which we may refer the reader, whilst the occurrence of the bicentenary of his death gives us an opportunity of publishing the portrait of one than whom no one is deserving of more reverence among horticulturists.

CULTURAL MEMORANDA.

DEYEUXIA ELEGANS VARIEGATA.

This decorative greenhouse grass is a native of Bolivia. From its stout rootstock are produced numerous arching, deep green leaves, each about a quarter of an inch in breadth, and ornamented with a clear, creamy-yellow margin.

The plant is easily increased by division of the crown, which consists of numerous suckers or off-shoots. These, with a few roots attached, should be potted singly into well-drained 3-inch pots, in a compost consisting of about three parts sandy loam, one of leaf-mould, and a sprinkling of sharp sand. Pot the crowns fairly firm, and afford an application of tepid water to settle the soil about the roots. Keep a close atmosphere about the plants for a week or ten days, until the roots have pushed into the new soil, after which the plants may be subjected to the ordinary greenhouse treatment. The plants should be shifted into 4½-inch, and again into 6-inch pots, as they require more room at their roots. Plants in the latter pots are of a size best adapted for decorative purposes.

MARANTA INSIGNIS.

This is a very distinct and beautiful foliage plant. The long, semi-erect, lanceolate leaves are of a light green colour, darkly shaded on their margins, and ornamented on the central portion with dark green oval blotches, arranged alternately with a small round bloth placed on each side the midrib. These markings, viewed in connection with the clear maroon colour of the under surface of the leaves, give to the plant a very handsome appearance.

The plant is easily increased by division, or by off-shoots taken from established plants with a few roots attached, and potted singly into 3-inch or 4½-inch pots, according to size of the portions. Use fine peaty soil and silver sand, and pot firmly. Place the pots in the plant stove and afford tepid water to settle the soil about the roots. The moist, warm atmosphere of the plant stove will suit the requirements of this Brazilian plant in every respect. *H. W. Ward, Rayleigh.*

HIPPEASTRUMS.

I think the majority of growers at the present time repot their stock annually. Unlike Mr. Ruse (see p. 116), I find no ill effects from disturbing the roots; but, on the contrary, I consider it is most beneficial to plants started from the new year onwards. When batches are introduced to a warm atmosphere during October or November to supply flowers in mid-winter, it is probably better not to repot them, the days being short and comparatively sunless. Any plants that are still dormant at the present date should be placed in an atmosphere of 60° at night until growth commences, when repotting should be carried out. As a rule it will be observed when shaking away the exhausted soil there are many decayed roots, hence the value of repotting annually or biennially. Robust plants after a few years' growth usually have their pots filled to the rim with fleshy roots, which renders it almost impossible to apply a top-dressing. Bottom heat may not be absolutely necessary, but when plunged to their rims in a bed of fresh leaves root action is much increased, and in an atmosphere of 60°, with fire heat, the flower spikes, as well as the foliage, are respectively stronger and firmer. I am not a believer in using any kind of manure in the soil, believing that it fosters disease, but rely on diluted manure water, which is applied as soon as the roots are seen to have reached the bottom of the pots. Some growers place their plants out of doors and expose them to sunshine in the month of June, and I adopted this practice one summer, but could not see that the bulbs ripened up any better, neither did they flower more satisfactorily than when treated under glass the year through. After they have passed out of flower I stand the plants along the front stage in an early vinery or peach-house, where they get all the light and sun possible. *J. Mayne, Bicton, Devon.*

PLANT PORTRAITS.

Adenandra fragrans, Roemer and Schultes.—*Icon Select. Hort. Thenens.*, t. 186. This is the Diosma fragrans of the *Botanical Magazine.*

Atraphaxis lanceolata, Bunge.—*Icon. Select. Hort. Thenens.*, t. 188.

Beaufortia sparsa, Robert Brown, and B. purpurea, Lindley.—*Icon Select. Hort. Thenens.*, t. 187.

Cinnamomum ovalifolium, Wight.—*Icon Select. Hort. Thenens.*, t. 189.

Hymenocallis calathina, Nicholson.—*Icon Select. Hort. Thenens.*, t. 190.

KEW NOTES.

Senecio Petasitis.

This Mexican plant, the Butterbur-leaved Senecio, is not often met with in gardens, although it was introduced into this country as long since as 1812.

It is a useful plant for the cool greenhouse or conservatory in January and February, and more especially for large structures. A number of plants, from 2 feet to 6 feet in height, are flowering in No. 4 greenhouse. The smaller plants were raised from cuttings inserted last spring, the larger being plants that were cut back after flowering a year ago, and grown on again.

The large terminal panicles of yellow flowers are freely produced. The leaves are petiolate, rounded, cordate at the base, fairly thick, dark green on their upper surfaces, and paler beneath, When planted out in a large house it develops a thick stem, and grows into a large bush.

It is figured in the *Botanical Magazine*, tab. 1536, under the name of Cineraria Petasitis.

Garrya elliptica.

On the west wall at the end of the Duchess border, the catkins on the male form of this evergreen shrub have formed a conspicuous feature during the past month, with promise to continue attractive for some weeks to come. The plant was introduced from California by the Royal Horticultural Society in 1828, through their traveller Douglas. Its value for planting for winter effect is not fully appreciated. In sheltered positions, not necessarily against a wall, the greyish-green catkins render it a conspicuous feature. The pendulous catkins on the upper shoots can be used very effectively in vases either by themselves or in conjunction with flowers. Propagation may be effected by means of layers, or by cuttings. If possible, place the plants in their permanent positions when they are small, as large plants suffer badly when transplanted.

Growing by the side of the male plant at Kew is a smaller female plant, whose flowers are very small and not so attractive as the catkins.

Epacris.

These Australian plants, the analogues of the Heath family at the Cape, are not so popular in gardens as they were a few years since, although they are eminently suitable for the decoration of a cool greenhouse in late winter and early spring. Between 40 and 50 of these plants are now a feature in No. 4. There are two distinct sections, the one being strong and upright in growth, the other lax or pendulous. The growths, many of them 18 inches or more in length, are thickly clothed with tubular waxlike flowers, arising from the axils of the leaves.

From 20 to 30 distinct species have been described, but very few are in cultivation. Only four species are given in the Kew *Hand-list of Tender Dicotyledons*, published in 1899. Of these, E. impressa, with its variety alba, and E. longiflora are flowering at the present time. E. purpurascens and the double-flowered variety E. densiflora and E. hyacinthiflora are included, but these are garden varieties.

A considerable number of beautiful hybrids have been raised, whose flowers embrace a variety of shades of colour, ranging from pure white to dark red. The following is a selection of those in flower, with their colours:—Ardentissima—reddish-terra-cotta; Alba odoratissima—white, the small flowers are sweetly scented; Fireball—bright red; hyacinthiflora—soft pink; hyacinthiflora rosea—deep pink; Model—pale pink; Princess Beatrice—rose-pink; Rose perfection—rose, the flowers are long and thin.

A large bush of E. longifolia var. superba, planted in one of the beds, is 5 feet in height. Being one of the lax-growing varieties, it has to be supported by stakes. A few flowers are usually to be found on the plant throughout the year. During the recognised flowering season it is clothed with red flowers tipped with white. *A O.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Dendrobiums.—A large number of species and hybrids of Dendrobium are in bloom at the time of writing, and some of the plants having already started to grow, it may be pointed out that these tender young growths are very liable to be injured if the atmospheric temperature of the house falls several degrees below the average and is permitted to continue so for some length of time. They are especially liable to become spotted and diseased if not carefully protected from cold or boisterous winds, which are more or less prevalent during the months of March and April. In order to guard against the plants receiving any such injury during the night, it is a good plan to fasten mats of double thickness along the sidelights and ends of the house, also to roll some mats along the lower part of the roof, which is the coldest part of the house, putting them on at dusk and taking them off early in the morning if the atmospheric temperature in the house will permit. In order to make these coverings secure we let down the lattice wood blind over them, tieing the blinds to small iron fixtures made for the purpose. Should the atmosphere in the house feel at all close or stuffy when the coverings are all on, a very little air may be admitted through the ventilators. When removing the coverings in the morning it may not be advisable to take them all off at one time, as sudden fluctuations in the conditions of the atmosphere should be avoided as much as possible.

Arachnanthe Cathcartii, &c.—The singular and handsome A. (Vanda) Cathcartii is now in bloom with five flowers on a spike. It is a plant that is rather particular as to position and treatment, but if fastened and trained up a Teak-wood raft and placed in a moist, shady part of the East Indian house, it will thrive luxuriantly. The present is a suitable time to examine such beautiful Orchids as Aërides, Saccolabium, Renanthera, Angræcum, Sarcanthus, Arachnanthe Lowii, and the warm-growing Vandas, to ascertain the condition of the plants as regards the rooting medium, &c., for with the increase of sunshine the young, tender points of the roots will commence to grow, and a slight touch would injure or break them. Plants that have lost a number of their lower leaves and that have a sufficient number of roots above to support them should be cut down, so that when the plant is placed in position in the new pot the leaves will be on a level with the rim. Afford plenty of drainage materials and use a compost of clean sphagnum moss and broken crocks, pressing it down firmly among the roots. For such large, fleshy-rooting species as Aërides crispum and its varieties Lindleyanum and Warneri, also A. crassifolium, A. Fieldingi, A. maculosum, and its rare variety Schroderi, Angræcum Kotschyi, and some of the stronger growing Saccolabiums, something different from sphagnum-moss appears to be necessary, as the thick, succulent roots do not thrive satisfactorily in such close, damp material. At Burford these plants are being placed in pots which are filled with moderately-sized pieces of well-dried elm bark, and some of the plants have been in this material for over a year, and are growing exceedingly well. The varieties of Aërides enumerated above thrive better in an intermediate temperature than when placed in great heat.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Ferns.—Examine the stock of Ferns, and if it is necessary to increase any by division there is no better time than the present to carry out the operation. Dispense with as many of the old fronds as is practicable, for by so doing thrips, if present, will be destroyed. Adiantums which were treated as advised in my Calendar for January 20 should be given frequent waterings of weak liquid manure and soot-water. Most Ferns, but especially Adiantums, thrive wonderfully if given a few doses of *Le Fruitier*, and also if a small quantity is used in the potting mixture. Ferns which have creeping rhizomes require a lighter compost to grow in than the crown or tufted species. Rough fibrous peat, chopped sphagnum-moss, small lumps of charcoal, and red sandstone rock, with a proportion of sand, forms the compost in which all the surface rooting Ferns are grown at Cleveley. For exhibition the six followings Ferns are worth growing: Davallia Fijiensis, Nephrolepis davallioides furcans, Goniophlebium appendiculatum, Davallia tenuifolia Veitchiana, Nephrolepis rufescens tripinnatifida, and Adiantum tenerum Farleyense. Apply water sparingly until the young roots have obtained a good hold on the new soil. Maintain an atmospheric temperature of 60° to 65°.

Primula verticillata.—This lovely sweet-scented species flowers from now onwards till the end of May. The plants are most useful for placing at the fronts of stages in the corridor or conservatory, also if associated with Tulips, Lily of Valley, or other bulbs they are very pleasing. A packet of seed if sown at once in an atmospheric temperature of 50° will soon germinate. A successional lot of plants may be raised by sowing new seed which will ripen in the course of a month or six weeks hence, on plants now going out of flower. The plants need to be cultivated in a cool greenhouse or frame.

Chironia ixifera.—Cuttings of this lovely free-flowering greenhouse plant may be inserted at the present time, and they will make nice plants if grown on for another year. Pot them in a compost of good sandy loam and leaf-soil, and feed the plants liberally when the pots have become full of roots. Pinch the shoots occasionally to induce a bushy habit in the plants.

General remarks.—Examine blinds used for shading, and take steps to have them put into good order so that when required they may be in readiness. The syringe must now be brought into use morning and afternoon on bright days to encourage growth in Codiæums (Crotons), Ixoras, and other stove species. The temperature of the water used for syringing purposes should exceed that of the atmosphere of the house by 5°. Continue to increase by cuttings, Fuchsias, Coleus, Petunias, and all soft-wooded plants which may be found useful in furnishing the houses when most hard-wooded plants will have been removed out of doors. Tuberous Begonias should be placed in shallow boxes containing a little leaf mould and sand. A suitable place and atmosphere may be found for the same in a Peach house or Vinery which has been just started. Give strict attention to cleanliness in all departments, and adopt every means to make the plant houses as attractive as possible.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Strawberries in Pots.—The earliest Strawberry plants that were started in January have made considerable progress during the past fortnight, and will now require daily attention in order to keep the roots in a moist condition. Cut off all weak and deformed fruits in order that those which remain may grow stronger. The fruits will now need to be supported by thin stakes about 8 inches in length, two of which should be placed in each pot and a piece of strong raffia tied to each stake for the fruits to rest upon. As the fruits approach the ripening stage, they would soon bruise if left to hang over the pot sides. Waterings with diluted liquid manure and a little guano dissolved in water may be applied to the roots alternately twice or three times each week until the fruits commence to colour, when it must be discontinued, and only clear water used. The best position for the plants at the present time is on a shelf close up to the glass in the Melon house or Pine stove, where there is plenty of atmospheric moisture, and exposure to full sunshine. Syringe the plants twice each day when the weather is favourable, for if red spider becomes prevalent the fruit will have a dingy appearance, and possess but poor flavour. When the fruits are ripe, remove the plants to a cooler atmosphere for a few days before sending the fruits to the table or packing them to travel. Place a large number of plants in an atmosphere of moderate warmth, so that there may be no break in the supply of fruit later on. Select the best plants with the most promising crowns, and as they begin to show their flower-scapes move them to a warmer atmosphere in numbers as may be required. Any plants that would be "blind" can be detected before bringing them into the houses from the cold frames.

Cape Gooseberry (Physalis peruviana). This fruit is very attractive when ripe, and it makes an additional dish to the dessert. Seeds should be sown at once, putting them thinly in a pot or pan of light soil and placing them over mild bottom heat. When the plants are about three inches high pot them into three inch pots, keeping them near to the glass, and when they have filled these pots with roots they may be planted out in a warm greenhouse or vinery in turfy loam, leaf-soil and lime scraps. If only a few plants are required 10 inch pots will be suitable to fruit them in, using the same kind of soil. When they become established they make much growth, and this will require to be thinned out regularly. The fruits ripen in August and September, and they are useful for dessert or for the making of jam.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

The Hollyhock from Seed.—Owing to the almost universal prevalence of the disease to which this beautiful flowering plant is subject, it is generally recognised that the only way to enjoy the colour of its splendid spikes, so essential to the boldness of a mixed border, is to raise fresh stock every year from seed. The seedlings, though not exempt from the fungus, still, in comparison to old plants and plants raised from old stock, enjoy an appreciable degree of immunity for a few years. It is almost hopeless for individuals to try to eradicate it entirely, and it is questionable whether united action on the part of all growers would do so, owing to the fact that all the mallows are subject to the same disease. The Hollyhock comes very true to colour from seed, so that when sown in distinct colours the seedlings can be relied upon for border decoration. Many prefer the autumn for sowing, and then grow on the seedlings through the winter in cold frames, but it will be found that sowing now, and growing the seedlings on quickly, is far better than keeping them throughout the winter, the prey of damp and slugs. Sow the seeds in well-drained pans or seed boxes filled with moderately rich soil, afterwards place the pans or boxes in a warm atmosphere and cover the seeds lightly with a sprinkling of fine soil. When strong enough to handle, the seedlings must be potted into small pots, using a good porous compost, and then when rooting freely they should be potted again into 5 inch pots, in which they can be hardened off by employing increased ventilation. As soon as they make sturdy growth the plants can be transferred to cold frames, where merely protection from frost and cold winds need be provided. By the end of the month of May they will have formed sturdy-growing plants fit for planting out. Treated thus, Hollyhocks flower the first year, though the spikes produced in the following year are much stronger and freer. It is interesting to note that one or two firms of seedsmen are supplying as a novelty seeds of what they term an "annual type" of Hollyhock. It is in mixed colours, and if sown in the middle of March and planted out in the first week in May the plants are said to bloom from the middle of July until late in autumn. According to the catalogue descriptions the habit is branching, semi-tall, with double flowers of graceful, loose petals.

The St. Bridgid Anemones.—Where the climatic conditions are comparatively dry, these roots are best planted in the autumn, but in localities where the ground is wet it is better to defer doing so until February or early in March. They ought to be planted at once, and to obtain the best results the ground should have been previously manured, but they succeed well in any good garden soil.

The Persian and Turban Ranunculuses.—These are also beautiful flowers for the garden, and afford a charming effect, particularly if grown in masses. It is even more advisable than in the case of the Anemones that the roots of the Ranunculuses should not be planted until the latter end of February or early in March, because they are even more susceptible to danger from being exposed in wet soils during the winter. It is essential that the Ranunculus should be given liberal treatment. The beds in which it is intended to grow them should be well prepared before planting by incorporating some manure and leaf-mould with the soil. If the soil has a tendency to be heavy, sand can be added. Draw drills about 6 inches apart and 1 inch in depth. Then place the roots in them about 4 inches between each, and press them firmly into the soil. A top dressing of good loam to the thickness of 3 inches should be applied, and then raking the bed smooth is an appropriate completion to the planting.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Gooseberry Bushes.—Complete the pruning of these as soon as possible. If large fruits are desired the branches must be well thinned out and the spurs cut back to three or four eyes on each. In cases where a large quantity of green fruits is desired the shoots may be left nearly their whole length. Gooseberries are first-rate when bottled properly whilst green. Protection from birds may be provided by the use of netting as was advised on p. 38. Sprinkle a good dressing of lime under the bushes, and if there is any lichen on the branches spray them with an alkali solution. Richards' XL-All Winter Wash is a good non-poisonous wash for fruit trees. It destroys all kinds of pest and lichen, and leaves the bark bright and clean. When this work has been done, lightly fork over the ground, and apply a good mulch of long strawy manure. The value of mulching to fruit trees cannot be over-estimated. These latter remarks apply with equal force to Red and Black Currants.

Raspberries.—If the growths have been tied to strained wire, the tops may now be pruned back. Let newly-planted canes be cut to the ground level. Autumn fruiting varieties, such as Belle de Fontenay, etc., should be pruned hard, half now, and the remainder about two or three weeks later. The whole of the Raspberry plot should then be given a liberal mulch of manure.

Alpine Strawberries.—Sow seeds of the variety called Sutton's Improved Red, the fruit of which is twice the size of that of the ordinary Alpine Strawberry. For this purpose employ boxes containing finely-prepared soil, and afford an atmospheric temperature of 55°. Sow the seed thinly, and when the young plants are large enough to handle prick them off into other boxes, and subsequently plant them out in a well-prepared border of fine, medium soil.

Planting must be finished without delay. Apply a mulch over the roots of all trees planted after this date. Have material ready for protecting fruit tree blossom from frost.

Morello Cherries.—Thin out the wood thoroughly and lay in good shoots their whole length all over the tree. This system needs to be repeated year after year, the young wood being the bearing wood. Leave plenty of room for young shoots to be laid in, and still have the advantage of exposure to light and air. Spray the trees with XL-All or Petroleum Emulsion just before the flowering stage.

Pruning should now be brought to a completion as soon as possible.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Onions in Boxes.—Young Onion plants raised from seeds sown early in January will now be in good order for pricking off into other boxes. They must be encouraged to grow to their fullest extent in order to get the greatest size possible if they are intended for exhibition purposes. Plant the seedlings 3 inches apart each way in a compost of rich soil and keep them in an atmospheric temperature of 55° until they have made considerable growth, and are ready for hardening off in the first week in April.

Vegetable Marrows.—Marrows are much appreciated early in the season, and a few seeds should be sown in pots at this date if means will allow a crop to mature in frames. One of the small varieties should be selected, such as Pen-y-byd, or Moore's Cream, and the Custard Marrow should not be forgotten; these latter are very fruitful and make a splendid dish. Sow the seeds in pots on a slight hotbed, or in a propagating pit, when they will soon germinate. Good crops should be secured by the latter end of May.

Early Peas which have been raised in boxes, and are now from 2 to 3 inches in height, should be hardened off in readiness for planting in the open. Thorough hardiness when first put out is essential to success. Some of the plants may profitably be planted in cold frames where space can be spared. In cold districts another sowing should still be made in boxes to succeed the others, using some of the varieties already mentioned in a previous Calendar. Those already established under glass will require considerable water at the roots, and should be syringed with tepid water in the afternoon on fine days.

Celery.—The main crop of plants remaining in the open may now be lifted and stored closely together behind a shady wall. This will allow the trenches to be levelled and the ground dug in readiness for the next crop. If time can be spared it is best to trench over the land, as the manure left in the trenches will then get better incorporated with the whole soil and the succeeding crop be more regular.

Seakale.—Plant out the main crop, and be careful to plant the best cuttings obtainable. A deep, rich soil that has been well manured is necessary. Seeds may be sown also, but good crowns are not so readily produced in one season from seeds as from cuttings, neither is the crop so regular. The variety Lily White is certainly an improvement as far as colour is concerned, but is not so vigorous in growth as the more common variety.

Spring Cabbages.—Slightly loosen the soil between the lines as soon as the plants begin to grow freely, and afford a sprinkling of nitrate of soda, which will hasten the crop towards maturity, as well as increase the size of the heads. Make up any blanks there may be by lifting plants from the old seed-bed, choosing a day when the weather is damp for this purpose. Young plants from seeds sown at the beginning of the year will now be ready to be pricked off into frames. These, when well grown, succeed immediately after those mentioned above.

Cauliflowers.—These young plants also will be in condition for pricking off, and should be encouraged to grow as fast as possible, but they must not be coddled or they will damp off. Use a compost of some good holding materials that will be sure to form good "balls" when the plants are being transferred to the open garden. Those wintered in frames should be finally hardened off in readiness for planting, and when this is done afford protection by hand lights, inverted flower pots, or anything that will secure them from damage on frosty nights. Scatter a little lime round each stem to protect them against slugs.

THE APIARY.

By CHLORIS.

How to Spread Brood without Danger.—Most of those who make a practice of spreading brood do so by inserting a comb in the centre of the brood chamber, and by placing the feeding bottle above it. By adopting this plan, we run a great risk of chilling the brood, and thus retarding the increase which is so desirable. During the past season I found another plan which, my informant told me, had not been attended in practice by any mishap. It was as follows: When the frames, occupied by the bees, are well filled by the cluster, another frame is added on one side, the cappings having first been removed or bruised, then the feeding bottle of syrup is placed over the frame, and, in about nine days, the operation is repeated on the other side. By adopting this method I was assured that no misfortune could follow, and the bees are soon in a very strong condition.

Buying Bees.—If the bees bought be in a skep, place them in their permanent position immediately on receipt, with the opening towards the south-east. It will be well to feed in order to stimulate breeding. It is awkward to feed bees in a skep, but the best way is to cut a hole in the top not less than 2 inches wide and place the bottle over it. Cover the whole up warmly and make it watertight, and also secure it against being blown over. It is a good plan to add a sheet of stout brown paper between the quilts, as brown paper is a bad conductor of heat, and will thus help to maintain a higher temperature within the hives during the cold weather which often prevails before the month of May or even June.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Mar. 3
- Ann. meet. Wakefield Paxton Soc.
- Soc. Franç. d'Hort. de Londres meet.
- German Gard. Soc. meet.

TUESDAY, Mar. 6
- Roy. Hort. Soc. Coms. meet.
- Nat. Rose Soc. Com. meet.
- Complimentary Dinner to Mr. William Marshall.

SATURDAY, Mar. 10 Dutch Gard. Soc. meet.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick—41·3°.

Actual Temperatures.—

London.—*Wednesday, Feb.* 28 (6 p.m.): Max. 46°; Min. 35

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 1 (10 a.m.): Bar., 29.8; Temp., 48°; *Weather*—Dull, with occasional sunshine.

Provinces.—*Wednesday, Feb.* 28 (6 p.m.): Max. 49° Ireland, South-east Coast; Min. 35° Scotland N.

SALES.

MONDAY—
Hardy border plants, Perennials, 1,800 Roses, Lilies, Azaleas, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY—
Perennials, Herbaceous plants, Lilies, Hardy Bulbs, Roots, &c., at 12; 3,000 Roses, at 1 and 3; Azaleas and other plants following, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

Sale of Roses, Fruit Trees, Lilies, &c., at Stevens' Rooms, King Street, Covent Garden, London.

THURSDAY—
820 cases Japanese Lilies, Thousands of Gladiolus, Davallias, Iris, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 3.

FRIDAY—
Collection of Orchids, 30 Cypripedium Lawrenceanum, received direct, Disas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Pedigree Sugar Canes. In an interesting article in the *West Indian Agricultural News* the history of raising Sugar-canes from seed is briefly given. At a time well within the memory of the present generation seedlings of Sugar-canes had not even been seen, and even Roxburgh had never seen seeds.

Rumphius, as cited by Alphonse de Candolle, in his *Origine des Plantes Cultivées*, stated that the Sugar-cane never produced seeds until it was allowed to remain some years in a stony locality. The possibility of raising Sugar-canes from seed was discussed in the West Indies between 1858 and 1888. Since that time seedling varieties have been raised which are found capable of resisting the attacks of disease, which destroyed the older forms, as well as of increasing the yield of sugar. By means of a system of rigorous selection both in the field and in the laboratory several good varieties have been raised, but, at the same time, even more rigorous elimination has been found necessary, for the great majority of the seedlings so raised were found to be no better than the old ones. In any case it takes several years before a seedling cane is sufficiently tested under varying conditions to deserve to be recommended to planters. Moreover, the variety that is found suitable for one locality is useless in another. Cross fertilisation has also been attempted, but, as it would seem, with doubtful results. Some varieties it is found do not produce fertile pollen. Cross fertilisation has been effected by emasculating the flowers while still young—a delicate operation obviously—and transferring by means of a camel's hair pencil the pollen of another variety to the stigma of the emasculated flower. The resulting seedlings raised by Mr. Lewton Brain are the first, observed in the West Indies, whose parentage on both sides is a matter of certainty.

Further experiments on a large scale are in progress under the superintendence of Mr. Stockdale, so that it is hoped in a few years that experimenters will be as successful as raisers of Wheat and other cereals have been in England, and, like them, will be able to produce pedigree Sugar-canes as well as pedigree Wheat or Oats.

Our Supplementary Illustration — Snowdrops at Home. — There are certain flowers which only look happy when their surroundings are Nature's, or a good copy of them, such are Snowdrops, Primroses, Cowslips, Anemones, Daffodils, Heaths, Furze, Ferns, and many more. One might express it differently and say that no plant looks happy unless its surroundings are natural. Use is second nature, and we certainly have got used to a great deal in gardening that wants reforming, but reform moves slowly. Meanwhile we are getting on. We have wild gardens, water gardens, grass glades, woodland walks, natural grouping, and other improvements in the garden, and plants which not many years ago were only seen in pots and pans and formal beds are now planted to run wild, as it were, whilst the hand of the gardener is cunningly veiled. The view of Snowdrops in a wild garden at Kew, reproduced in the Supplementary Illustration, should make every gardener decide to grow Snowdrops in future only in Nature's way. A bed of such things is as natural as a waggon-load of monkeys; pots and pans filled with them as artistic as the contents of a sardine tin. Of course, it is not every lover of the Snowdrop who, desiring to have some of his own, can give them a big stretch in a wild garden three acres or so in extent, as is done in the Royal Gardens, Kew. But our public parks and gardens might do a great deal more of this sort of thing. Some day, perhaps, we shall be so far "reformed" as to have turfed over all our formal flower-beds and got into the habit of copying Nature's best work in everything. Someone remarked recently that the flower-bed was a proof of civilisation, just as are the top hat, tight lacing, and shaving! Maybe he was right; at any rate, as things are at present we must go in for them all, although some of us would like to abolish them. Fashion and what we like to call convenience control our gardening efforts; but let us, just to show that we are masters of our own actions, now and then break the bonds, as was done when we started "wild" gardening. *W. W.*

Small Holdings.—The departmental committee appointed by the President of the Board of Agriculture and Fisheries to inquire into the subject of small holdings resumed their sittings on the 21st ult. Evidence was given by Mr. J. W. Willis Bund, chairman of the Worcester County Council, and Mr. F. Smith, F.S.I., chairman of the Small Holdings Committee, Worcester County Council.

George Monro, Limited, Concert Committee.—The tenth annual Bohemian concert arranged by this committee was held at the Queen's Hall, Langham Place, W., on Thursday last, the 22nd ult., and was again a great success, both numerically and financially. The vast hall was filled to its utmost capacity, and it was computed that 1,800 persons were present.

The secretary, Mr. H. Baker, informs us that the sale of tickets exceeded any previous record, and therefore the various gardening charities for whose special benefit these concerts are arranged will in all probability receive a larger amount than in any previous year.

The programme was indeed a monster one, and where the artistes engaged were of all-round excellence, and included such well-known society entertainers as Miss Martha Cunningham, Miss Edna Thornton, Messrs. Alfred Heather, Charles Tree, McCall Chambers, Will Edwards, R. H. Douglas, and James Godden, it may seem invidious to mention any one specially; but we cannot refrain from saying that Miss Edna Thornton's singing of "Land of Hope and Glory," accompanied by the Coldstream Guards' band (Conductor, Lieut. J. Mackenzie Rogan), was a musical treat well worth a long journey.

During the evening the Chairman, Geo. Monro, Esq., who was supported by many of the leading men in the horticultural world, was presented by the Committee with a handsome brass and copper table gong, suitably inscribed, and we noted he used it with great success during the evening.

Italian Gardens.—Messrs. Longmans, Green & Co. have just issued a prospectus of a very fine work they are about to publish, entitled "The Art of Garden Design in Italy," by H. Inigo Triggs, A.R.I.B.A. It is dedicated by special permission to H.M. Queen Margherita of Italy, and will consist of a handsome volume folio with 128 plates, 17 inches by 13 inches, of which 73 are reproduced in collotype. The first part of the work consists of an historical essay on garden planning from the days of the Roman Republic through the Imperial Age to the Middle Ages down to the early Renaissance. The second part is a series of descriptive accounts of the principal villas still remaining—Isola Bella, Villa d'Este, Villa Carlotta, Boboli Gardens, Villa Campi, the Quirinal, the Vatican Gardens, Villa Borghese, Villa Pamphili, Villa Medici, and Villa Lante.

Dishonest Trade Marks.—A Canadian fruit grower was convicted in January last of having in his possession 50 barrels of apples marked XXX., but which were below the standard required. The case was proved, and the chief of the fruit division said that the man who deliberately marked packages falsely committed a crime against society. The magistrate imposed a fine of 50 dollars and costs, or imprisonment for 30 days in the common jail.

"Gardening Year-Book and Garden Oracle."—Mr. George Gordon, editor of the *Gardeners' Magazine*, has again issued this annual, now so well appreciated. It includes an almanack and diary, many gardening articles and notes, and plenty of pictures. The frontispiece is a pretty coloured plate of the hybrid Wichuriana Rose, Pink Rambler.

The Magazine of Fine Arts.—The February number contains an illustrated account of the famous illustrated manuscript bought by Mr. Quaritch at the sale of the Earl of Cork's library. The price paid was no less than £2,600, but the book is unique. In this volume, the title of which is *Le Livre de Rustican des Prouffits Champestres*, the people and the life of the fields of 500 years ago are represented with a beauty and care that is charming and instructive. We see the castles, farms, fields, gardens, implements, the manner of working; in fact, everything relating to country life in mediæval times; and in more than one occupation the method practised then is similar to that in use to-day. By way of illustration a figure is given showing some men engaged in grafting. In another plate the process of house-building and thatching is depicted; in others various agricultural and gardening operations. Nothing is known of the author of the book nor of the illuminator whose art is so highly estimated by our contemporary.

"The Year-Book of New South Wales."—This annual, issued under the auspices of the Agent-General in London, is as usual full of useful information concerning New South Wales and its resources. There is a short article on forestry, and the agricultural industry is also dealt with. As the Year-Book bears reference to the whole Colony, its government, history, present status, products, industries, and even the postal regulations, it will be understood that each subject can be but briefly dealt with. It should prove as valuable for reference as previous issues have been.

Railway Reforms.—At present a committee, presided over by Lord Jersey, is enquiring into the question of preferential rates given by railway companies to foreign produce. It is expected that a report will be presented to Parliament at an early date. To tackle the question of reform in connection with many other railway matters a most influential committee has recently been formed, known as the Joint Railway and Parliamentary Committee. It consists of representatives from the National Fruit Growers' Association, the London Chamber of Commerce (Green Fruit Section), the Federation of Grocers' Associations, Meat Traders' Associations, the Horticultural Trades, the Potato Trades, and others. The president is Mr. George Monro, and meetings are held every week at the Tavistock Hotel, Covent Garden, W.C. The necessity for action has been brought about by a huge combination among the railway companies and the formation by them of a Joint Claims Committee. Nothing was ever devised by the railway companies of Great Britain which has been, and is, such a source of irritation to traders as this Joint Claims Committee. The railways have, in many cases, two classes of rates, a "company's risk" rate and an "owner's risk" rate. The former means that the railways carry the goods as ordinary carriers, and are responsible for damage and loss. "Owner's risk" used to mean that the companies at least were responsible for delivering the goods in some shape or form, but since the combination and the advent of the Joint Claims Committee they do not even undertake that liability. Cases are on record where they delivered several parcels less than they received; where they delivered them to a wrong station; where they set fire to a truck of bananas and some cases of plants and offered the consignee the charred remains. In all these instances when claims for damages were sent in the Joint Claims Committee said: "No liability; goods consigned at owner's risk." To contest these decisions of the Railway Companies' Committee the trader has to fight the combined railway companies of the kingdom in the Law Courts at enormous cost. In the report of the Departmental Committee on Fruit Culture it is stated that "this action of the railway companies may not be illegal, but it has caused great irritation among growers all over the kingdom." The difference between "company's risk" rates and "owner's risk" rates varies from something like 7½ per cent. to 50 per cent., but even the greatest difference should not imply that the railways are at liberty to do what they like with the goods entrusted to them. Compensation claims used to be entertained, too, for loss of markets, but that also is a thing of the past, unless the sender can prove "wilful misconduct." It was shown before the Departmental Committee just referred to that if the *owner's* risk rates were slightly raised, say, by 5 per cent. (which Mr. Vincent Hill suggested was the proper difference between them and company's risk rates, though the actual difference is generally much more, and varies enormously), and if all fruit, both by passenger and goods trains, was carried at company's risk in future, growers would gladly pay the small extra amount. The development of *petite* culture in all its branches is one of the most hopeful lines along which to look for help in the solution of the "unemployed" and "back to the land" problems, and better railway facilities would go a long way to help such development. It is singular that exactly the same questions affecting railway management are attracting the serious attention of traders in the United States. There, the strenuous President, Mr. Roosevelt, is interesting himself in the matter. It is hoped that Mr. Lloyd George, M.P., President of the Board of Trade, will emulate President Roosevelt in this, and tackle the subject. In an article in the February *Century Magazine*, the following appears: "This is what has happened, and is happening, in all parts of the States. Where there is not absolute identity of ownership in the railways serving different markets, that ownership is so concentrated that it has become possible for the owners of different properties to sit down in conference and determine that 'suicidal competition' shall no longer prevail. With notable exceptions, market competition can no longer be relied upon either to reduce rates or to prevent their advance. . . . As a result, rates upon almost every staple article have, within the last five years, been materially advanced. . . . If the railway imposes upon me an unjust charge for the transportation of my person or my property, it violates the law, precisely as I should do if I declined to pay a reasonable charge for that transportation," says the American writer. So says the British trader, and to get a more accessible tribunal, a less costly tribunal, and a tribunal more in touch with commercial methods, he means to go to Parliament.

Sugar Beet Experiments.—The high price of sugar in 1904, and the exclusion of bounty fed sugar from the English market have had the effect of again bringing into prominence the question which has for many years been much discussed as to the advantage of manufacturing sugar in this country from home-grown Sugar Beet. The Essex Education Committee have therefore conducted certain experiments in order to find the yield and quality of the Beet grown on typical soils and to compare some varieties. The results show that Beets have been grown equal to and in some cases better in quality than those produced in sugar-making countries. It would seem, therefore, that a new and profitable industry has been but too long neglected. The business side of the question—the cost of production and the consideration of the local conditions prevailing in the Eastern counties, the cost of working a factory, and a host of similar points, need, however, careful and experienced consideration. Mr. George Clarke, who has assisted in preparing the Report from which we now quote, issues the warning that nothing would be more disastrous both to farmer and to capitalist investing his money in the erecting of plant, than for the former to embark on the cultivation of Sugar Beet on an extensive scale without a proper knowledge of the best methods of cultivation, the varieties best suited to his particular neighbourhood, and the amount it would cost him to grow the crop. Still, there seems to be no reason, if due consideration be given to all these details, why a properly initiated undertaking should not be remunerative both to the farmer and the manufacturer. As regards an unsuccessful effort in this direction started some 30 years ago, it is noted that the mean percentage of sugar in the Beet used was 10.0. The mean of over 80 samples from different plots grown in Essex in 1905 is slightly over 16½ per cent. of sugar. This is a striking illustration of the improvement in the quality that can be brought about by careful selection along the right lines. Cultivation is a matter fully as important as the choice of the best varieties of Beet, and the subject of manuring also requires careful study. In the experimental plots it was found that the sugar content was considerably increased by the use of sulphate of potash. For further details of these important trials readers should consult the pages of the Report, which is fully and instructively illustrated. It may be had from the County Technical Laboratory, Chelmsford.

Mythical Plants.—The astonishing stories that are occasionally reproduced in the lay journals are a source of amusement to botanists and gardeners who are apt to wonder whether the information supplied on matters outside their own department is as untrustworthy as that relating to the subjects of which they have first-hand knowledge. Dr. George A. Grierson writes from Camberley under date of January 6th:—"In *The Times* of to-day your Calcutta correspondent, in describing the visit of the Tashi Lama to Bôdh (not Buddh) Gayâ, says—'One can imagine the feelings with which he solemnised the mysteries of his religion under the spreading branches of the same venerable Bo tree of Buddh Gayâ, beneath which, according to Buddhist tradition, Gautama himself received enlightenment.' I was for five years magistrate of Gayâ, and probably know the temple and tree at Bôdh-Gayâ as well as most people. In the interests of historical accuracy permit me to point out that the existing Bo tree, or Bôdhi-druma as it is called in India, has not spreading branches, is not venerable, and is not the same tree as that under which Gautama is said to have received enlightenment. The existing tree was planted in 1876, being a seedling from its predecessor. When I last saw it, some eight years ago, it may have been 20ft. high, and had no spreading branches. It is a 'peepul' (Ficus religiosa), a quick-growing, short-lived tree, and, even if its history were not perfectly well known, it could not possibly be the identical one under which the Buddha sat. According to tradition, the original tree was cut down by the Emperor Asôka (say, 250 B.C.), and is said to have been destroyed a second time by his Queen after it had been miraculously restored. The Chinese pilgrim Yuan Chwang tells of another persecuting monarch, by name Sasanka, who cut down its successor of the seventh century A.D., and dug up most of the roots. 'Then he burnt it with fire and sprinkled it with the juice of the sugar-cane, desiring to destroy it entirely, and not leave a trace of it behind.' Shortly afterwards, a pious local Râjâ, 'with the milk of a thousand cows again bathed the roots of the tree, and in a night it once more revived and grew to the height of some ten feet.' Dr. Buchanan Hamilton saw the tree about the year 1811. According to him:—'The tree is in full vigour, and cannot in all probability exceed 100 years of age; but a similar one may have existed in the same place, when the temple was entire.' The penultimate Bôdhi-druma, which was the one seen by Dr. Hamilton, was blown down by a storm in 1876, and its successor, the present tree, was planted in its place by Mr. Beglar, who was then in charge of the restoration of the temple. At this time it was worshipped both by Hindus and Buddhists. I believe that I am correct in stating that Mr. Beglar planted two seedlings, one on the original site for the Buddhists, and another a short distance off for the Hindus, and that both trees are now in existence. General Cunningham was of opinion that there must have been 'a long succession of fresh trees raised from seed, from the time of Asôka down to the present day. Perhaps as many as 12 or 15, or even 20, to meet the frequent destruction to which it was exposed.' "

The Fixation of Nitrogen.—Professor Silvanus Thompson, in lecturing at the Royal Institution on this subject, began by emphasising the enormous practical importance of the question in connection with the wheat supply of the world. The demand for wheat by the white races increased every year with increase of population. But the acreage of land devoted to wheat-growing did not increase at an equal rate, and in any case, being limited by climatic conditions, would all be taken up in a comparatively small number of years, perhaps less than 30. When that condition of affairs was reached there must be a wheat famine, unless, as Sir William Crookes pointed out to the British Association in 1898, the world's yield per acre (at present about 12.7 bushels) could be increased by the use of fertilisers. Wheat required some fertiliser containing fixed nitrogen, and the chief substance of the kind now available was nitrate of soda, obtained from the nitre beds of Chile. The demand for this had practically doubled since 1890, and in 1905 was over a million and a half tons; at the present rate of consumption the supply would be exhausted in less than 50 years. Then the only chance of averting starvation from the races for which wheat was the staple food would be, as Crookes pointed out, through the laboratory, through chemists discovering some method by which at a sufficiently cheap rate the free nitrogen of the atmosphere could be fixed in a form that could be utilised by the wheat plant. Experiment showed that the nitrate of lime produced by electric means by Birkeland and Eyde, of Christiania, was as good a fertiliser as Chile saltpetre. The conditions in Norway were exceptionally good for furnishing cheap electric power. Hence the new "Norwegian saltpetre" could compete with the imported saltpetre from Chile, and would every year become more valuable as the demand for nitrates increased and the natural supplies became exhausted.

Costa Rica.—The ninth volume of the *Anales del Instituto Fisico-Geographico Nacional de Costa Rica*, of which Dr. Pittier is the Director, has been published. It contains detailed meteorological observations on climate for the year 1896, which are important for cultivators of plants. A partial enumeration of the flowering plants by Captain Donnell Smith follows, together with a monographic sketch of the Piperaceæ by M. Casimir de Candolle. The Acanthaceæ are enumerated by M. G. Lindau, the Euphorbiaceæ by Prof. Pax, and the Araceæ by Dr. Engler. The general character of the flora shows a closer relation to the flora of Northern South America than to that of Mexico.

The Uses and Misuses of Manure.—The Dorset County Council has published a report on the Soils of Dorset, by Professor John Percival, that contains some valuable information concerning plant foods and manures. In 1898 the University College, Reading, undertook to analyse 100 samples of soil from various parts of the county of Dorset and to report upon them. This was done partly by Mr. Jeffreys and Dr. Luxmoore, as well as by Professor Percival (Director of the Agricultural Department of the college), who now issues this summary of the results obtained, which should have an immediate interest to farmers in the county and elsewhere. Briefly, manures are applied to soil to supply constituents lacking from it and necessary for certain crops. Such plant-food, therefore, must be given as is naturally deficient in the land to which it is applied, and, further, such as is required and can be assimilated by the crops to be grown thereon. To apply manures whose effect is to neutralise each other, or which are unsuitable to the soil and to plants, is unnecessary labour and a waste of resources. The details concerning the use of nitrogenous, phosphatic, and potassic manures are very valuable, and should be carefully studied by all who are contemplating the employment of artificial manures.

Commercial Research in the Tropics.—An institute has been formed in connection with the University of Liverpool for the purpose of collecting and co-ordinating information of all kinds relating to commercial products, or substances used in manufactures, and of supplying scientific information to all interested in commerce. These objects are carried out by means of scientific explorations, research work in the laboratories and museums of the University and of the city. The Department of Economic Botany is under the direction of Dr. Eric Drabble, that of Economic Zoology has Mr. Newstead on its staff as Economic Entomologist, and there are numerous other experts dealing with chemistry and other sciences. The first part of a journal, which is to be issued quarterly, is now before us. It contains full details as to the work of the Institute. The experiments of Messrs. Garton on the improvement of Cereals and other plants will be subjected to exhaustive examination, and a report thereon is announced as nearing completion.

The almond.—The first flowers on an Almond tree in a favourable position in Wandsworth, south-west of London, expanded fully on Wednesday last, February 28, as against March 7 last year, and March 21 in 1904.

Sugar-cane Experiments in the Leeward Islands.—We note the publication of the first part of the report on Sugar-cane experiments conducted at Antigua and St. Kitts in 1904-5. Trials were made of varieties of Sugar-cane to prove which were of most value for certain districts. Good results were obtained, though very severe drought, particularly in Antigua, was a serious drawback. The report is drawn up under the superintendence of the chemist in charge of experiments, the Hon. Dr. Francis Watts, and contains a brief introductory letter by Sir D. Morris.

United Horticultural Benefit and Provident. — The annual general meeting of this society will be held at the Horticultural Hall, Vincent Square, Westminster, S.W., on Monday, March 12, 1906, at 8 p.m. Mr. H. B. May will preside. The committee hope that as many members as possible will endeavour to be present.

The Royal Horticultural Society is forming a collection of the best varieties of Grape vines at Wisley. All that are wanted have been met with except Diamant Traube and White Nice, and for these the secretary and the superintendent have inquired in many quarters but failed to find them. The society would be most grateful to anyone who can supply information of their being still in cultivation, and from whom they may be obtained. It is a thousand pities that two such varieties should perish off the earth. Will foreign and American Horticultural papers be so kind as to copy this note? *W. Wilks, Sec. R.H.S.*

Bird-Lime for Catching Rats.—Mr. C. Drieberg, Superintendent of School Gardens, Colombo, writes as follows in the *Tropical Agriculturist* for January :—"It is not generally known how readily rats may be caught by means of bird-lime. If it is desired to make a colony desert their burrows it is only necessary to smear a little round the entrances. If it is desired to catch them, the best way is to dress plenty of straw and spread this thickly on the ground around the burrows. Among the straw throw some attractive bait. When the spot is visited next morning the straws will be found gathered up in little bundles, and in the centre of each will be found a rat, alive or dead, according to the extent of its entanglement. If the bird-lime is to be used indoors take a piece of stiff brown paper and put the sticky stuff in the centre. Bird-lime can be easily made by boiling down linseed oil. Put the oil into a tin, place the tin in a saucepan of water, and let it boil slowly till it is of the right thickness or stickiness."

Para Rubber in Singapore.—We have received the first annual report by Messrs. H. N. Ridley and R. Derry on experiments in rubber-tapping made in the Botanic Gardens, Singapore. Certain important facts as to the growth of trees, yield of rubber, best methods of procuring and preparing latex were ascertained, and the records form a valuable basis for continued researches. The work was most sedulously carried out, and the rubber obtained fetched on sale in all cases the highest price in the market at the time, showing the care taken in its preparation.

LEAVES FROM MY CHINESE NOTE-BOOK.

(*Continued from page 101.*)

The Flora of the District.

Our knowledge of the flora of this neighbourhood is considerable, thanks to the labour of Père Soulie, Mr. A. E. Pratt, Prince Henri d'Orleans, Père Faurie, Père Mussott, and the Russian traveller, Potanin. Hemsley, in his "Flora of Tibet or High Asia" (Journal Linn. Soc., Vol. xxxv.), speaking of the flora of this neighbourhood, says: "In character it is essentially Himalayan or Indo-Chinese, and is quite distinct from that of Tibet proper." Anyone who has had the opportunity of botanising in this region, or of examining the collections made there, must certainly agree with this statement. The Sikkim-Himalayan element is very striking, even to a casual observer. In point of numbers, two of the commonest plants are Primula sikkimensis and Podophyllum Emodi, both of which are common in Sikkim.

Tatien-lu, it may be said, is situated on the extreme edge of the Himalayan highlands, and less than a day's journey in a westerly or north-westerly direction brings one to the luxuriant pastures of the Tibetan uplands. These pastures support huge herds of yak and sheep. Around the town, an occasional field of wheat, barley, or Irish potato is all the cultivation one sees. These fields are usually fenced by hedges composed almost entirely of the wild Gooseberry. The only trees are Populus euphratica, with an occasional Spruce Fir and Walnut.

It was on the evening of July 14, 1903, that I arrived at Tatien-lu after a circuitous and arduous journey of 20 days. I took up quarters in the same dilapidated Tibetan inn that had lodged all travellers from the time of Gill and Baber downwards. Two days later I left for a trip to the snowy range south-west of the town. On this journey I was accompanied by Mr. Edgar, of the China Inland Mission, in whom I found a delightful companion. To this gentleman and his colleague, Mr. Moyes, I am much indebted, and it is with feelings of deep gratitude that I recall the many acts of kindness I received at the hands of these estimable gentlemen.

Leaving by the South Gate, we followed the main road to Lhassa—a broad, well-paved road. Crossing a stone bridge, situated a short distance above the site of the old town, we entered the nondescript country of Djiala. Soon afterwards, sheltered beneath magnificent groves of lofty Poplar (P. euphratica), we passed two large Lamaseries and a building containing many prayer cylinders, each with numerous prayer-flags flying from their roofs. Large cairns of stones, surmounted with tiny prayer-flags; slabs of slate or marble, and tiny cones of dried mud, all with prayers inscribed thereon. These, to mention nothing else, were sufficient to remind us that we were in the hierarchy of Lamaism. Herdsmen, with their yak and sheep; women and children gathering fuel, harvesting grain, or performing ordinary household duties, all chant, in a not unmusical voice, their universal prayer, "*Om mani padmi hum.*"

About two miles from Tatien-lu we left the main road and followed the left bank of the River Lu, crossing over to the right bank soon afterwards by a rickety wooden bridge. A little above this bridge the stream bifurcates—one branch rising in the Cheh—To pass over which the road to Batang crosses; and the other in the snow-clad peaks flanking the Ya-chia-kang, our destination.

Our road was through lovely grassy country, with a very steady rise. A wealth of many-coloured herbs enlivened the path; various species of Pedicularis, with white, red, pink, and golden flowers, were particularly abundant, more especially where the country is marshy. In these same marshy places, Primula vittata, P. Poissoni, Lilium Duchartrei, and a species of Parnassia abound. In less marshy, but by no means dry, meadows, a Primula (P. Cockburniana), with wonderful *orange-red* flowers, occurred in thousands! (See *Gardeners' Chronicle*, May 27, 1905, Fig. 137.) In fairly dry places, clumps of a yellow-flowered Cypripedium (C. luteum) were conspicuous. The flowers of this fine Cypripedium are nearly as large as those of C. macranthum, and of a clear yellow colour throughout, though occasionally an odd flower or two is seen in which the lip is brownish. In addition to these, we saw Morina Delavayi, with white, pink, or purple flowers, Pæonia anomala, and various Composites and Labiates in abundance. Bushes of Lonicera, Spiræa, Hydrangea, Berberis, Rhododendron, and Viburnum, stunted and scrubby in appearance, are common; and over these trail two species of Clematis, with a wealth of yellowish-white fragrant flowers.

Passing the king's summer palace, a very unregal looking place, with a filthy exterior, we reached a tiny stream, and lunched there. Thermal springs are common hereabouts; in some of these the water is naturally boiling. Near our luncheon place were several huge prayer cylinders fixed to horizontal wheels, and turned by the water of the stream.

On restarting, we continued through similar country, with a fine snow-clad peak straight in front of us, and another to our left, and soon reached two or three Tibetan farmsteads (alt. 10,000 feet), where a little barley is cultivated. Just beyond this tiny hamlet we commenced a steep descent of a thousand feet, through a dense thicket of Rhododendrons, dwarf evergreen Oaks, Berberis, Hippophae rhamnoides, with a few trees of Larch, Silver Fir, and Spruce interspersed. Herbs abound: a species of Iris, with large, dark, violet-blue flowers, Trollius yunnanensis, Podophyllum Emodi, Parnassia sp., various Composites and Umbelliferæ being perhaps the more striking. Less conspicuous, but none the less interesting, were Primula deflexa, and two other species, Fragaria filipendula, with luscious fruits, Ajuga ovalifolia, with lovely blue flowers, various species of Pedicularis, and many terrestrial Orchids.

On clearing this interesting belt, we soon reached a house, or, rather, the remains of one, for fully half of the roof was missing, tenanted by an old drone and her idiot daughter. We had agreed to make this point our base, and made arrangements accordingly. The old woman having agreed to accommodate our followers, we selected a convenient spot near by on which to pitch a tent for ourselves. Our baggage coolies and men not having arrived, we thought we would beguile the time by having a look around. Rain, which had fallen in fitful showers during the whole day, commenced again as we set out, and we were less than half a mile from the house when it fell in torrents, quickly drenching us to the skin. It was more of the nature of hail than rain, and hurt as it struck one's face. My poor dog howled and shivered with cold. The yak and their hardy herdsmen did not seem to mind the raging elements in the least, but we were benumbed with cold. Hurrying back with all speed to our shelter, with visions of hot tea and dry clothing, we were far from anticipating what really awaited us. The altitude had affected our men, and they were in a sorry plight, only two being in any sense fit to do anything. Our cook—the most important man for the moment—lay stretched out on a plank with his head swathed in bandages. With difficulty we managed to get out of him what was wrong. He said "his head was swimming and throbbing, his heart palpitating sixteen to the dozen, and that a general paralysis had seized his legs, and more particularly his knees." Lifting him up on his legs, we gave him a stiff dram of brandy, but the moment we loosed him he sank into a heap on the floor. It was hopeless to expect anything from him, so for the moment we let him go. Whilst I acted as family doctor, my companion and the two men in good health attempted to fix up the tent outside—meanwhile rain, hail and sleet descended in torrents. After half-an-hour's struggle, the rain and wind conquered, and the task of rigging the tent outside had to be abandoned. There being no possible place to sleep inside, free from rain, the only thing left was to fix the tent up inside the house, the floor of which, owing to the absence of part of the roof, being already a quagmire. At length it was put up somehow, our beds were arranged beneath it, and oil-sheets placed over the top, as the thin cloth did not pretend to be waterproof. Next we built a fire in the driest part of the house we could find, and all huddled around it to get warm and dry. After a time, we managed to get some hot tea, and with this and ship's biscuit and cheese made a hearty supper.

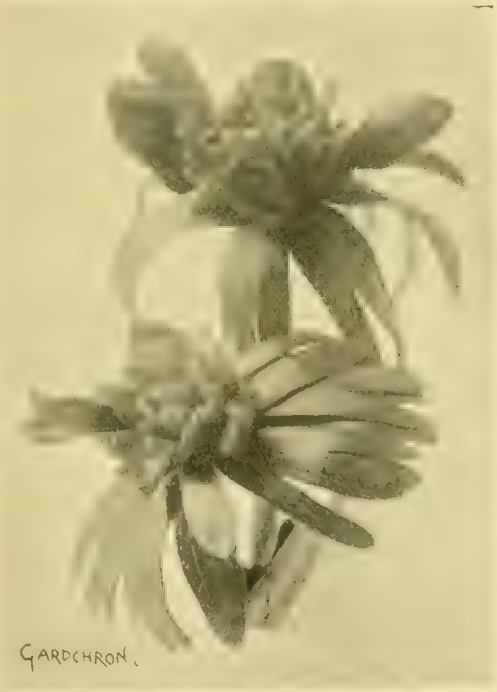

FIG. [illegible]3.—DOUBLE FLOWERS OF THE WINTER ACONITE.

Having done all we could for our men, and lent them what spare clothing we had, we sought our beds about 11 p.m. By this time our tent was soaked through, in spite of the oil-sheets; the wind and rain continued without mercy, and did not cease in violence until 6 o'clock next morning. Having at length got rid of our soaked garments—a difficult enough task under the circumstances—we eventually got between the blankets. No sooner had I lay down than drip came a spot of rain into my eye; I turned over, and drip came another into my ear. I twisted this way and that way, but there was no escape. Like evil genii these rain-drops pursued me turn which way I would. I could not move my bed, since this was longer than the tent was broad, and my feet already exposed, and we were sorely afraid the whole thing might collapse, it being anything but secure. My companion was in a similar plight, and there being no escape, we buried our heads beneath the blankets and tried to get to sleep. Our sleep was fitful and disturbed. About 2 a.m. I awoke to find that my blanket had slipped over on to the floor; pulling it over me again I disturbed four half-drowned chickens whom my thoughtless men had tied to a post alongside my bed. These chickens resenting the loss of the blanket tried to follow it, and succeeded in nearly blinding me with mud.

About 4 a.m. our firewood gave out, and things assumed a very dismal aspect. However, all things have an end; day at length dawned, and all were devoutly thankful. On getting up, we found that our beds were soaked through and through, and our blankets plastered with mud. With what fire remained we managed to boil some water and make some tea. We breakfasted on ship's biscuits and cheese, and felt none the worse for the night's experience. *E. H. Wilson.*

(*To be continued.*)

THE DOUBLE WINTER ACONITE.

One of the most delightful of our Spring visitants is the winter Aconite, Eranthis hyemalis, with its frill of green leaves surrounding its yellow petals. The double form in which petals take the place of stamens is not so commonly met with. Nevertheless, it amply deserves to be more fully known, on which account we give an illustration of it, taken from a photograph by Mr. H. A. Smith, of Lewisham.

THE ST. LOUIS EXHIBITION.

The official report of His Majesty's Commissioners for this exhibition has been published. It gives the history of the undertaking, and details the steps taken by our own Government to secure that British products should be (as far as the Customs regulations would permit) adequately represented. One great hindrance alike to the exhibition and to trade in general lies in the most oppressive fiscal regulations which the United States Government deems desirable in the interest of its own manufacturers and producers. These effectually prevented some of our manufacturers from exhibiting as they would have done. It is doubtful whether the advantages to the citizens of the U.S. outweigh the annoyances to which, not only foreigners, but they themselves are subjected by the vexations of their Custom House regulations.

These are dealt with at p. 15 and p. 167 of the Report, and again in the Report of the Art Committee, from which we extract the following remarks:—

"The great difficulties resulting from the stringent nature of the regulations of the United States Government in regard to works of art and industry from foreign countries are fully dealt with in a separate report by Sir C. M. Watson. It may, however, be mentioned in this connection that before the packing of our works of art could be commenced no less than ten separate forms, containing miscellaneous information, had to be examined and approved in various departments of the U.S. Custom House.

"It is, however, satisfactory to note that, in the face of very exceptional obstacles, Great Britain was the first to complete the dismantling of her Art Section, and it was well on its way to New York before permission had been obtained by some of the other foreign art departments to begin the work of packing."

The Departments of Horticulture and Forestry were officially represented by Mr. H. J. Elwes, F.R.S., from whose report we extract the following particulars:—

"Cannas were the only group of plants which really made a great show at the time when the jury was sitting, and these, favoured by the warmth of the climate, were much superior to what I have seen in England, though the individual varieties and novelties were perhaps not finer than what have been raised and grown in the South of France.

"The one striking exception to the general uniformity of the ornamental bedding was an extremely fine collection of Water Lilies and other aquatic plants exhibited by Messrs. Dreer, of Philadelphia, which filled a large pond, and were, in my opinion, by far the most meritorious exhibit in this section.

"The foreign exhibits in these classes mostly took the form of gardens surrounding the pavilions and buildings of their respective countries, and though they contained fairly representative collections of annuals, lawn-grasses, Roses, shrubs, and trained fruit-trees, in which latter the French were supreme, I saw nothing, except a fine collection of Cacti from Mexico, which calls for any special remark.

"The British garden was designed by one of our most able landscape gardeners, Mr. Goldring, of Kew, and his designs were carried out by his representative, Mr. T. W. Brown, in a manner which did the greatest credit to his horticultural skill and taste. The materials at his disposal, which consisted, with few exceptions, of common bedding plants and annuals, were made the most of under extremely difficult and trying conditions of soil and climate. The general effect of the British garden was good, and quite in keeping with the style of architecture of the Royal pavilion. The trained Yew trees and other examples of the topiary art sent by Messrs. Wm. Cutbush and Son, of Highgate, were much admired.

"The French garden, which was of great size, and admirably laid out by M. Vacheraux, of the Municipality of the City of Paris, contained many collections of Roses, fruit trees and shrubs; and was in most respects the largest and best exhibit made in this department by any foreign country.

"The Japanese garden, designed and laid out by Mr. Y. Itchikawa, of the Japanese Commission, was also quite national in its character, and contained a considerable number of dwarf-trained trees, in the cultivation of which the Japanese have such a world-wide fame, but the difficulties of transit over so great a distance had, to some extent, marred his efforts; and coming, as I did, straight from Japan, I was not so much impressed as I should otherwise have been, because the spring and early summer is the time at which Japanese gardens are at their best, and most of the flowering Plants such as Irises, Lilies and Pœonies had lost their beauty in September, whilst Chrysanthemums had hardly begun to flower.

Fruits, etc.

"In the fruit classes the wonderful development of American horticulture was splendidly represented. The Horticultural Building, covering nearly four acres of ground, was in the month of May filled with a collection of fruit, preserved mostly by cold storage from the previous year, of an extent, variety, and quality which no other country could equal. It was arranged in State exhibits, and was constantly replenished by fresh arrivals from time to time as the new season's fruit ripened."

English Exhibitors.

"The following firms contributed selections of plants and seeds in accordance with suggestions which were made to them as to the description of flowers required:—

"Messrs. Cannell & Sons, Carter & Co., J. Cheal & Sons, W. Cutbush & Son, Hobbies, Ltd., Kelway & Son, Sutton & Sons, Sander & Sons, Mr. John Forbes, and Mr. Amos Perry.

"The plants and seeds were forwarded to St. Louis during the autumn of 1903, where arrangements were made for their propagation and display at their proper season. The trees required for forming the 'Pleached Alley' and the outer boundary of the garden, as well as a large number of shrubs, flowering and otherwise, were purchased in the United States, the transportation from England of so large a quantity of growing trees being impracticable in the time. The garden, with its large variety of flowers thus exhibited, throughout the period of the Exhibition was greatly admired, and was a source of considerable attraction to visitors as an example of the methods of treating a garden in accordance with the architecture of the building it surrounded. Sixty large clipped Yew and Box trees (topiary work), which were lent by Messrs. Cutbush and Sons to be placed on the terrace of the pavilion and in other appropriate positions in the garden, were of great interest, this branch of horticulture being almost unknown in the United States. These trees were sent out under special arrangement with the steamship company to St. Louis at the latest possible date to arrive in time for the opening of the Exhibition, as it was feared they would be damaged by the severe frost prevailing in the early spring, and those which remained unsold were, for the same reason, despatched immediately the Exhibition closed.

"At the close of the Exhibition, the garden, with the trees, shrubs, grass lawns, fountains, vases and seats, was handed over to the Washington University of St. Louis, which owns the land, and will be maintained by that body until the ground is required for other purposes.

"In the Horticultural Building a series of photographs and a plan of the Royal Botanic Gardens, Kew, were exhibited by the Board of Agriculture and Fisheries, these being afterwards presented to the Missouri Botanical Garden, St. Louis."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Onions (see p. 128).—Certainly Onions were known in Britain in Anglo-Saxon times. In the 8th century Epinal Glossary we have "ascalonium ynnelaec" (i.e. Onion leek), to distinguish it from "allium-garlec" (i.e. spear leek). See *Gardeners' Chronicle* Nov. 3, 1888, p. 502. *H. N. Ellacombe.*

Foreign Apples.—Being a very bad Apple year we are purchasing foreign fruits in barrels. Although these are tightly packed and are very much bruised and compressed, one seldom finds them rotten. Are they treated with a fungicide before being packed? Because, if an English Apple is stored with the least bruise decay sets in at once. *J. S. Fowley.*

Hydrocyanic Acid Gas.—The use of hydrocyanic gas as an insecticide (see p. 88) requires discussion in order to get at the best means of generating it, the quantities to use, and its effect on vegetation. I am indebted to Mr. Storrie, of Dundee, for practical instruction in its use, but I have not employed it so extensively as he has. At present I am vaporising several houses, vineries at rest, into which a few plants that are subject to mealy bug and to Eucharis mite are placed to undergo treatment. I am using for each 1,000 cubic feet 4 ounces cyanide of potassium at 98 per cent., 8 ounces sulphuric acid, and 16 ounces water. I proceed in the following manner:—Large flat earthenware basins are used as vaporisers, the proper quantity of water is measured into each, then a bottle of acid containing the exact quantity is decanted into the water, and last of all the cyanide, which is tied in brown paper, is popped in one after the other as quickly as possible. The value of the paper consists in its delaying the production of gas long enough to enable the operator to get outside without fear of inhaling it to the least degree, which, if not dangerous, may result in a bad headache. A 3½-ounce strength of cyanide destroys mealy bug, but it is to be borne in mind that it has not been proved to destroy eggs of insects, and though every insect may be destroyed one need not be surprised when vaporing in the season of growth if in ten days or a fortnight a new generation appears. I tried the gas two years ago on a house of Black Hamburgh, on the bunches of which some bug had effected a lodgment. I was rather dubious as to the effect the grapes might have when eaten, but after trying them some days afterwards no bad results followed, and so we may consider the treatment harmless. It would be interesting to know if all kinds of grapes can be safely vaporised. Muscat of Alexandria, for instance, resents insecticides generally. Black Alicante is, of all varieties, one of the most difficult to clean, owing to the downiness of all the parts of the current year's growth. There is a difficulty with the railway people here, as they object to carry sulphuric acid unless at a largely enhanced rate. Where this is pressed it makes it a rather expensive method of getting rid of insects, otherwise it is as cheap as others, and certainly the most effective of all. *R. P. Brotherston.*

Nothing can be farther from my desire than to check in any way the introduction into gardening of cheap and effective insecticides or fungicides. My objection to such a fumigant as hydrocyanic gas is that it is very dangerous to human life. That may be mere sentiment; but as legislation has in so many directions of late tended to the protection of human life from poisonous compounds, and very proper legislation too, it does seem as if there was a tendency to revert to dangerous practices in commanding the employment as a fumigant in plant houses of a gas that is admitted to be of a highly poisonous nature. However, there are plenty of gardeners, and to spare, hence presumably the death of a few can hardly be allowed to stay the progress of fumigation experiment. If the insect life in a plant house be destroyed what matter even if a few human lives be taken also? *A. D.*

Willow for Bat-making.—In reply to several enquiries I may say that the best Willow timber for the manufacture of cricket bats is that of the white or Huntingdon Willow (Salix alba) and the Bedford (S. Russelliana)—the former, in my opinion, is preferable. They are of the readiest culture, as cuttings inserted in autumn or spring grow away freely, while a post driven into the ground emits roots and soon becomes established. I prefer, however, to grow the cuttings in the nursery for two years before planting out permanently. It is well to bear in mind in the cultivation of Willow timber for the making of cricket bats that unpollarded trees, or such as have not been beheaded or pruned too severely, are preferred, and, incidentally, it may be mentioned that such specimens are less liable to the attacks of injurious insects. *A. D. Webster.*

Gros Colmar Grape (see p. 128).—The reply to *Grape* was well worded and to the point, but there is still more to be added from the market side of the question. Gros Colmar is a Grape that, even under the best cultural conditions, requires fully six months to colour, and then another long month to hang before it is fit for the table. The question of when to start the Vines is entirely in the grower's own hand. It is not so much how soon these can be ripened as when they are wanted for market purposes. Provided red spider is kept under, Gros Colmar started in March, and grown as an exclusive crop, without being subject to the consideration of other things in the house, will have the fruit well coloured in the corresponding period of September, and fit for cutting in November and December. This undoubtedly is the safest culture of all, and if the Vines are not overcropped they should prove remunerative. Good Grapes of Gros Colmar, good in bunch and berry, even in a bad market realise 1s. 6d. to 2s. per lb. These figures represent actual facts. Fire heat is a very active factor in producing flavour. No other late crop of Gros Colmar will ever equal that resulting from starting the Vines in March, because they will not get the two months' interval between the cutting of the fruits and the restarting of the Vines. *Stephen Castle.*

The Royal Horticultural Society's Exhibition.—The exhibition of table decorations on June 20 promises to be one of the most interesting meetings in the Vincent Hall. I cannot but think adversely of the lack of enterprise on the part of the Council in offering no other award in any of the 29 classes beyond the Society's medals. This policy cannot but limit competition and therefore interest in the exhibition. The professional florist may regard such an exhibit as an exceedingly good advertisement for the purposes of trade, but for the amateur—male or female—the circumstances are entirely different. Amateurs set little store in obtaining medals as a recompense for time, expense of journey, and possibly the purchase of flowers also. If prizes (in kind if they like) were offered, the display would, I venture to say, be much more worthy of such an exhibition. No class of exhibitors that I am acquainted with think more seriously of the nett results of their labours than do the amateur lady decorators. They prefer to see something much more solid than the possibility of obtaining even a gold medal at the "discretion of the Council." *Decorator.*

The Carnation in French Literature (See p. 97). In French gardening literature the Carnation has held for centuries past a very prominent place, almost equal to that perhaps which it enjoys in English gardening literature. For if we can find authors like Parkinson, Gerard, Rea, Gilbert and others who have deemed it worthy of their notice we shall probably find that Pierre Morin, Louis Liger, Fuard du Castel, Xavier Mallet and other old French horticultural authors of the 17th and 18th centuries have been equally interested in the Carnation in a general way. One of the most erudite and interesting authors on florists' flowers in the 18th century was the Pére d'Ardène. His works are essentially monographs of the subjects on which he writes, and each runs into two or three hundred pages. His *Traité des Œillets*, published in 12mo. at Avignon in 1762, is described by no less an authority than M. Gibault as beyond doubt the best old book on the Carnation. This work is probably as rare as the two by L. B. and L. C. M. B. Another and possibly equally scarce French book on the Carnation is *Nouveau Traité des Œillets*, by Goube of Valenciennes, published in 12mo. at Cambrai in 1769. A few years later a book was published in Paris entitled *Beauté de la Nature ou Fleuromanie Raisonnée*, which, again on the authority of M. Gibault, was essentially a treatise on the Carnation, although it contained chapters on Hyacinths, Tulips, and Auriculas, a kind of French Hogg or Maddock, we may suppose. This is a book 12mo. in size, and it appeared in 1775. After this a great break occurs, and I know of nothing until another writer on florists' flowers undertook the subject. This was the Baron de Ponsort, who in 1841 brought out his *Traité sur la Culture de l'Œillet Flamand*. I have only the second edition, which bears date three years later, and is a very comprehensive treatise of nearly 200 pages dealing with almost every phase of its culture, its diseases, enemies, and classification. In 1845 the same author wrote *Appendice à la Monographie du Genre Œillet*, in which there is a coloured frontispiece of the variety Laure de St. Vincent and ten coloured plates showing the markings of the petals of the various varieties. Ragonot-Godefroy was another of these French writers on florists' flowers, and among his works is one entitled *Traité sur la Culture des Œillets*, published in Paris in 1842. Of this I only know the second edition. It is purely cultural except that he gives a tabular form of classification at the end and two plates (uncoloured) of the distinctive differences of the petals of the different kinds of Carnations. Of *L'Œillet, son Histoire, et sa Culture*, by Dupuis, published in Paris in 1862, I know nothing except the name, for although modern, it seems to be almost as difficult to obtain as some of those published a century before. Most of the remaining French books on the Carnation are much more modern, and little more in many cases than mere pamphlets; but it may be interesting to some of the readers of the *Gardeners' Chronicle* to mention them. There is *Culture et Multiplication de l'Œillet*, par un Amateur, Paris N.D., published probably thirty years ago. Then there is Mottet's *Les Œillets, Historique, Description des Principales Espèces, Races et Variétés, &c.*, published at Paris in 1898, and of which a second edition has recently been issued. *Culture de l'Œillet sous Chassis*, by Francis Orengo Antibes, 1898; and last, but not least, a very excellent treatise in cloth covers by Jules Rudolph, entitled *L'Œillet à la Grande Fleur*, with 22 illustrations, published in Paris in 1903, in which the history of the flower is given at some length, while the subject of propagation by seeds, cuttings, and layers, selection of varieties, culture in pots and in the open, insects, and diseases, all receive an adequate portion of the writer's attention. In addition to the above there is a little Swiss pamphlet, printed in French, called *Culture Pratique de l'Œillet Remontant*, by Auguste Guillot, published in Geneva in 1903. *C. Harman Payne.*

Broccolis at Wisley.—Lest an impression should prevail amongst those persons who send things to Wisley for trial, that such things meet with sparse consideration at the hands of the Fruit and Vegetable Committee, I beg leave to point out that the two Broccoli heads, viz., Snow's Winter White and Brydon's Peerless, mentioned in your report at p. 110, were from Wisley, where, in conjunction with others, they had been grown, but being presented to the committee at the Vincent Square Hall on the 13th in a hard trimmed form both closely resembled each other, and although Mr. S. T. Wright regards Peerless as dwarfer and the heads have better protection naturally than Winter White, and two or three members spoke favourably of it, the Committee thought, as going to Wisley to see the plants at this time of the year was out of the question, to request that at the next meeting plants of each variety just as pulled from the ground, and in no way trimmed, should be sent up for examination. The Committee have the greatest desire to deal justly with every exhibit, whether from Wisley or elsewhere. *A. D.*

Transplanting Early Peas.—I raise my earliest crop of culinary Peas in boxes of my own make, provided with a sliding bottom. When the seedlings are ready for transplanting, a trench is opened the width of the boxes, which are then placed in the trench and the sliding bottom removed. The boxes are lifted and the Peas remain in the trench with their roots practically undisturbed. I withhold water for a day or so previous to transplanting in order that the soil may leave the boxes readily; but after planting, the Peas are given a copious supply of water. I find this system gives excellent results. The plants are 6 inches high when planted out, and sticks are at once placed in position as much for protection in their early stages as for support. The trenches are made sufficiently deep to allow of earthing. The ground is double dug early the previous autumn with a heavy dressing of manure in the bottom of each trench. It is gone over again and thrown up in ridges to receive the full benefit of the effects of the weather. Planting is generally performed about the first week in February, previous to which the ground is levelled. The boxes when empty are washed and dried ready for use again the following season, or they can be used for other crops such as Celery. *S. K.*

Another Ornamental Kochia.—Under the name of Kochia trichophylla I have before me in an Erfurt seedsman's catalogue an illustration of a plant labelled K. trichophylla (Summer Cypress). This appears to be an exact counterpart of the plant that has been grown at Swanley, Hampton Court, Victoria Park, and many other districts during the past three years under the name of K. scoparia. My attention was first directed to the form of Kochia which has been so attractive in our parks, whether K. scoparia or K. trichophylla, by the generosity of Messrs. Cannell and Sons, of Swanley, who sent to me a few plants for trial. They pleased me greatly, and excited the attention of visitors by their symmetrical form and their delicate tint of fine green foliage. These plants were sent out under the name of Kochia scoparia. The following year, wishing to enlarge the stock of such an elegant reintroduction, I ordered seed from a firm of repute, and from the seeds which they supplied as Kochia scoparia developed plants so inferior to those obtained from Messrs. Cannell that I threw them away. Thinking, perhaps, that my treatment of the seedlings in question was at fault, the following year I ordered some more seed of Kochia scoparia from the same source, with the result that I raised a batch of seedlings which, when planted out, grew in such an attractive form, and coloured so beautifully towards the end of the summer, that I am sure, from the numerous enquiries I received, there will be a large demand for seed this spring. Experience has thus taught me that there are two kinds in commerce under the name of K. scoparia, and I should like to know the proper name for the best decorative variety, such as was shown by Messrs. Cannell at the Crystal Palace and at the Royal Horticultural Hall, whether trichophylla or scorpia. Under whatever name it may be recognised, I am sure that the finest form already grown and exhibited in England will not be surpassed by that now being sent out under the name of K. trichophylla. Kochia scoparia was known to Miller, for, in the sixth edition of the abridgement to the *Gardeners' Dictionary*, published in the year 1771, under the name of Chenopodium scoparia, the following details, among others, appear:—"Goose-foot, with narrow spear-shaped leaves, which are plain and entire, commonly called Belvedere, or Summer Cypress." Then follows this description:—"It is a beautiful plant, which is naturally disposed to grow very close and thick as in as regular a pyramid as if cut by art. The leaves are of a pleasant green; and were it not for that, it hath so much of the appearance of a Cypress tree that at some distance it might be taken for the same by good judges, etc., etc." Does not this description of that talented gardener, written more than 135 years ago, apply equally to the form we are now growing as Kochia scoparia, and have not the names of Belvedere and Summer Cypress been handed down from that time also? I trust to be spared through the coming summer to test whether there is any difference between the variety which has been re-introduced by Messrs. Cannell as K. scoparia and the variety now being introduced from Germany under the name of Kochia trichophylla. If no difference is found, which is to be the correct name, K. scoparia or K. trichophylla? *J. W. Moorman, Superintendent, Victoria Park.* [The *Index Kewensis* contains no such species of Kochia as trichophylla. K. scoparia is known to be very variable, and even the same plant varies in appearance according to season.—Ed.]

Horticultural Examinations.—Although I agree with Mr. Watson in the main points of his note regarding examinations in horticulture, yet I do not think it would be wise to disparage horticultural examinations altogether. "Theory without practice" may be useless in any profession, yet "theory" combined with "practice," in gardening, as in other professions, no doubt, is as great a boon as any man can possibly have. I am a "third-class" man myself, and have been a gardener all my life, but the study necessary to gain the third-class certificate more than compensated me for my trouble, by helping me to understand things more clearly, and making me think more about my work than I otherwise should have done. The R.H.S. examinations are too severe for an ordinary young gardener, who starts his career in the bothy, and who has only had a day-school education. Botany may not be absolutely necessary for a gardener, but a knowledge of elementary botany helps him to understand the particular needs of a plant, and makes plain the reason why they require particular treatment. I would like to suggest that the British Gardeners' Association should institute examinations in horticulture, and *only allow young gardeners to enter*. There should not be one severe examination only, but two or three extending over several years. As a boy enters a garden as a garden boy, let him prepare himself for the first examination to take place when he is about 17 years old, the second examination when he is 20, and the last when he is about 23 years old. At that age he ought to be able to take his first foreman's place, and have three or more years as foreman before becoming "head." The first examination need not be severe, but one that should encourage study in elementary botany and the first principles of horticulture, and the others should be gradually more severe. I think by this means the standard of the British gardener might be raised considerably above the present level, and in years to come the gardener would be in a position to hold his own. All successful candidates should be entered on a special register of the British Gardeners' Association, or the B.G.A, might work in conjunction with the R.H.S. in such a matter. *A. E. T. Rogers, Sudeley Castle, Glos.*

I do not imagine the promoters of the examination system ever thought examinations would afford a perfect test of capacity, but I am sure the institution of these examinations is a step in the right direction, and I am pleased to hear that the London County Council think so also, and I should like to hear of other public institutions taking the same view. If so, we might then have a better system of examinations for gardeners adopted by the Royal Horticultural Society, and then our profession would be raised to the level it ought to hold. In my opinion, if such were done it would rid gardening of a lot of superfluous hangers on, and would also afford a guarantee to employers that they were getting gardeners who knew their work from the most elementary portions upwards. I am also sure that a perfect system of examinations would do more to raise the wages of real gardeners than any British Gardeners' Association is likely to do. *W. G.*

Mr. Watson states in a recent issue that young men of proved ability rarely get into the first class. The reason of this is that the majority of gardeners have not acquired the power of close study. In many cases they find this more arduous than their daily work. Many practical gardeners have the idea that the R.H.S. certificate can be obtained without a knowledge of the scientific principles on which his work is founded, but without them how is he to obtain the knowledge of his art? It is true that in horticulture we want men who are able to do things—practical men who understand the principles on which their work is based. No practical gardener who has made a careful study of the R.H.S. syllabus, apart from any examination whatever, will deny that he has received benefit from its perusal. In conclusion, it would be interesting to know how far the Kewites, apart from their practical work, are trained in this "class-room" gardening, and whether or not Mr. Watson owes his position he now holds to practice alone. *G. H. H. W.*

With the general trend of Mr. Watson's remarks upon this subject (page 106) the majority of experienced men will readily agree. Such examinations cannot serve as an adequate test of a candidate's special aptitude as a cultivator, but has such a result ever been claimed for them? I am not aware that any council or any examiners have asserted or implied that those who pass the Royal Horticultural Society's examinations are necessarily fully qualified gardeners. Employers do not engage their men on the strength of such certificates alone, nor do the holders expect it, so no one suffers in the matter, because no one is deceived unless they mislead themselves. But your correspondent goes farther than this, for he implies that such examinations are almost useless. Against such a notion a protest must be entered. The studying, thinking, and preparing for such ordeals have broadened the minds of many, and have given them a pleasure and intelligent interest in their work which they never before possessed. The disinclination for the labour of gaining a higher education in their business has been one of the chief causes that has retarded the advance of gardeners, especially in the south; in the north the eagerness for knowledge has during a long period been more evident, with substantial results. Examinations offer an inducement to self-improvement, and that leads to progress in the right direction. Personally I would sooner have a man who had tried and failed in any competition than one who had never tried, provided they were equally experienced in their work. One of the great authorities has said: "The rule-of-thumb method of doing anything is pure mimicry . . . without knowing or caring for the reason why." Again he adds: "The man who possesses the greatest range of knowledge relating to his special subject is the one most likely to succeed." Success is a relative term, as fortune does not favour all alike, but even in failure a man who has made the acquirement of knowledge his constant object has a service of pleasure of which even his enemies cannot deprive him. Beyond this a gardener has constantly to deal with well-educated people, who nowadays often include a study of plant-life in their curriculum, and certainly it does not lessen an employer's estimation of his gardener when he finds the latter is duly informed upon the scientific side of his art. In fact, such a knowledge is expected of any man in a good position at the present time. It has always been a difficult matter to induce the young to take a right view of the advantage of study, and if examinations aid in doing this they have their use and justification. In a recent visit to a leading establishment, a hybrid plant was noted which had been raised in that establishment, but not one of the men in the house could tell its history or what its parents were, though to any plant lover it possessed considerable interest. These men may be first-class cultivators—certainly the plants were in admirable condition—but would they have been any less skilful if they had shown an intelligent interest in the plants under their charge? Your correspondent refers to the action taken by the London County Council in desiring their employees in the Parks Department to submit themselves for examination. That is a step in the direction of raising the status of the men, which experience has proved to be not only desirable but absolutely necessary. There are serious defects in the County Council's system, but if they pay wages equal to those given to hundreds of head gardeners they should at least require the men to possess the rudiments of common knowledge. The concluding remarks in Mr. Watson's letter convey a wider meaning than I am willing to believe he intended, but in himself he has a reply to his stricture. As a speaker and a writer, as well as a skilful cultivator, his ability is admitted, and each characteristic has contributed to his success, though it may be difficult to determine their proportionate share in the result. *L. Castle.*

Examinations in Horticulture (see p. 124, last issue).—On line ten the printer has put Examiners' for Examinee's! *G. Henslow.*

Obituary.

George Norman, V.M.H.—As these pages are passing through the press we receive the sad intelligence of the death from heart failure, on Wednesday last, of Mr. George Norman, V.M.H., head gardener to the Marquis of Salisbury, at Hatfield. The funeral will take place at Hatfield Cemetery, on Monday next, at 3 p.m. Mr. Norman was a native of Bedfordshire. He has filled the position at Hatfield House, Hertfordshire, for 30 years, having been appointed there in 1876. Previous to that date he had acted as foreman for several years in Linton Park Gardens, Maidstone.

SOCIETIES.

SEVENOAKS GARDENERS'.

Vaporising with Hydrocyanic Acid Gas.

At a recent meeting of the above society, Mr. A. H. Westcott, Woodleigh Gardens, Sevenoaks, read a paper on "Cyaniding under Glass." The materials required for this method of fumigating plant houses are cyanide of potassium, sulphuric acid, two pans and a punkah, or fan, for diffusing the gas through the house. One of the pans is fixed to a block of wood, which is hinged, the other pan being placed below, and in such a position that when the top one is tilted by means of pulling a cord, the bottom one receives the contents of the upper. Place the two pans in the middle of the house with the attached string leading to the keyhole of the door through which it is drawn. Place the fan immediately over the pans. The best time for generating the gas is at night, when no person other than the operator is present. When ready for fumigating place the cyanide of potassium in the top pan, and in the lower one put a quantity of water, and mix with this sulphuric acid, stirring them together with a stick. The liquid becomes extremely hot, and this is an advantage, for when the potassium cyanide is put in the heat facilitates the evolution of the gases. [Do not fill the pan with the potassium cyanide until the last possible moment, and when the string is ready to be pulled from the outside.—Ed.]

The late George Norman.

Care should be taken not to walk on or entangle the cord when passing out of the house. The ends of the cord being outside, and the doors securely locked, the operation may be put into execution. First work the fan to set the air in motion, and then by means of the string release the cyanide salt into the sulphuric acid, taking care to observe the time.

The punkah should now be well worked, and especially at first, whilst the gas is being rapidly generated. Probably ten minutes will be found quite sufficient to diffuse the gas through the house. Keep the structure closed for 40 or 50 minutes, after which some of the ventilators may be opened from the outside and a little later the doors, the operator using great caution and holding his breath. With moderate ventilation the house should be clear of the gas in about 20 minutes, but operators should keep on the safe side. The odour of bitter almonds is an indication that traces of the gas are still in the house, but a slight smell is not injurious.

Although potassium cyanide has been universally used for the purpose, and may still be used in some cases, sodium cyanide is, in my opinion, preferable. It is smaller in bulk and gives a more convenient effervescence. The amount of cyanide used must be regulated by the heat of the houses and by the tenderness of the plants. For cold houses I have found a remarkably small dose sufficient—namely, 2 oz. sodium cyanide to every 1,000 cubic feet of space. This is a less quantity than has sometimes been used, but it is sufficient to kill mealy bug and all other living pests without causing the slightest injury to any plant. The following plants stood the above quantity without injury:—Tomatos (covering the roof), Fuchsias in flower, Cannas, Chrysanthemums, Heliotrope, Lobelia, Pelargoniums, Asparagus, Azaleas, Adiantum, Primulas, Cyclamens, Palms, Codiæums (Crotons), &c.

DOSES FOR EACH 1,000 CUBIC FEET ENCLOSED SPACE.

Sodium cyanide, full strength.	Sulphuric acid, strength 1.8.	Water.
1½ ozs.	3 fluid ozs.	9 fluid ozs.
1¾ ,,	3½ ,,	10½ ,,
2 ,,	4 ,,	12 ,,
2½ ,,	5 ,,	15 ,,
3 ,,	6 ,,	18 ,,

Two ounces of cyanide is sufficient for a cool greenhouse. The sulphuric acid need not be pure, but should be strong and of a specific gravity not less than 1·8. Commercial oil of vitriol is about this strength, and it requires to be diluted with water in the proportion of one part of sulphuric acid to three parts of water by measure. The plan to follow is to first put the necessary water into the acid dish, next the proper proportion of acid into the water, and stir with a stick, and lastly the cyanide into its metal dish. Sodium cyanide is given at 130 per cent. strength in comparison with potassium cyanide of 98 per cent., and therefore only three fourths of the weight of sodium cyanide is required.

Fumigating Out-of-Doors.

The standard for trees out of doors is one ounce cyanide for every 200 feet of space. In introducing this operation to cultivators I am fully aware that in careless hands it is a most dangerous process, but in careful hands the danger is practically nil. I think the lines I have laid down are perfectly safe, and I know they are perfectly effectual. No. 1 house, containing a space of 792 cubic feet, required 1½ ozs. of sodium cyanide, 2½ ozs. sulphuric acid, and 7½ ozs. water. The plants in the house were Azaleas, Cyclamen, Primulas, Begonias &c., and these were not injured in the least, but on the staging and the floors were dead wood-lice, which had even come out of cracks in the walls. Worms were also expelled from the soil in pots and were shrivelled. No. 2 house, containing 1,471 cubic feet, required 2¾ ozs. of cyanide salt, 5½ ozs. sulphuric acid, and 15 ozs. water. The plants vaporised were Codiæum (Crotons), Streptocarpus, Asparagus, Maidenhair Fern, Pelargoniums, and Palms, &c. The insects affected by the gas were mealy bug, thrip, scale, and green fly; everything living was effectually destroyed.

It should be remembered that the above is the smallest amount of cyanide which has ever been used for the purpose, whilst great damage has been done from overdosing the houses. It now remains to determine what effect temperatures, atmospheric moisture, &c., have upon the action of plant life in the presence of the gas. Cyaniding should not be performed on plants in full sunshine. In winter, however, it may be done at any time, either day or night. The evening is the more suitable time, for several reasons, and fewer workmen will then be found about the place. In the daytime instruct one, or perhaps two, trustworthy men to prepare everything in readiness so that operations can be started directly the staff has finished for the day. The charges of cyanide can be weighed out and put into tins and be locked up until the last moment. The generators should be put into the house and the punkahs hung in position with cords attached leading through a ½-inch hole made in the door. Immediately the workmen have left, the water and acid can be put into the bottom pans, then the cyanide in the top ones, but never allow any cyanide to be between the operator and the outer door. The door should then be closed, the time carefully noted, and the cord pulled. The punkahs should now be kept moving for ten minutes to thoroughly incorporate the gas with the atmosphere. A neat cyaniding battery with interchangeable parts is of great service. The punkahs should be large enough and heavy enough to balance properly. For filling the acid pans a glass measure, which can be obtained at any chemist's or stores, should be used, also a small pair of scales for weighing the quantities of cyanide salt.

Vines which have all the fruit removed and which are infested with various pests should be treated as follows:—All tender plants must be removed and the cubic space of the structure calculated. The pans and the cyanide dishes should be placed in position and the house kept as dry as convenient. Arrangements must be made for opening the top ventilators from the outside. All means of access to the vineries must be locked, so that there may not be the remotest chance of any person going into the house while the gas is being evolved. For a vinery at this season of the year use 2 ozs. sodium cyanide to every 1,000 cubic feet of air space. The vinery must be kept closed after vaporising for about one hour, when the ventilators and doors must be thrown wide open and allowed to remain so for an hour or two, or until the morning in the case of empty vineries. Next wash the vines with water under high pressure. The cyaniding should be repeated in the spring, but not in such strong doses.

Caution.

Death by prussic acid poisoning would be the doom of any individual carrying out these directions without due care, but, if the necessary precautions be taken, there is no danger of fatal consequences.

MANCHESTER & NORTH OF ENGLAND ORCHID.

February 8.—The following Awards were made at the meeting held on this date:—

First-Class Certificates.

Cypripedium × Mrs. Mostyn Chardwar var. (G. W. Law-Schofield, Esq., and S. Gratrix, Esq.); C. × chrysotoxum var. Victor (S. Gratrix, Esq., and H. Low & Co.); Cattleya Trianæ var. Lady Brunner (J. H. Craven, Esq.).

Awards of Merit.

Cypripedium × Charles Turner (G. W. Law-Schofield, Esq.); C. Adrastus superbum, Vine House var. (A. Warburton, Esq.); C. × The Duchess (S. Gratrix, Esq.); C. × insigne Chantini × C. Godefroyæ leucochilum (J. Cypher & Sons); C. × aureum var. Mrs. E. Rogerson (E. Rogerson, Esq.); C. × Rogersonianum (E. Rogerson, Esq.).

Messrs. J. Cypher & Sons were awarded a Silver Medal for a good group of plants.

Votes of thanks were given to Messrs. Heath & Sons, S. Briggs-Bury, Esq., E. Rogerson, Esq., and J. Cowan & Co., Ltd., for various groups.

February 22.—There was a good display of plants at this meeting. A group was exhibited by R. Le Doux, Esq., West Derby, which contained some well-grown Lycastes (Silver Medal). Messrs. J. Cypher & Sons, Cheltenham, also had a good display of plants (Silver Medal). Messrs. J. Cowan & Co. received a Silver Medal for a good group. W. Thompson, Esq., Stone, received a Bronze Medal for a small, choice collection, and a similar award was made to Philip Smith, Esq., of Ashton-on-Mersey. Votes of thanks were passed to Mr. S. Allen and Mr. D. McLeod.

First-Class Certificates.

Cypripedium × Euryades var. magnifica (G. W. Law-Schofield. Esq.); C. × Amy Leemann (J. Leemann, Esq.).

Awards of Merit.

Cypripedium villosum × C. insigne Sanderæ (G. W. Law-Schofield, Esq.); C. × Beatrice Leake (G. W. Law-Schofield, Esq.). *P. W.*

ABERDEEN CHRYSANTHEMUM.

February 17.—The annual business meeting of the members of this society was held on the above date in the Young Men's Christian Association Buildings, Aberdeen, Mr. James Esslemont, Langley, chairman of the society, presiding. The financial report for the past year, submitted by Mr. Magnus H. Sinclair, secretary and treasurer of the society, showed a credit balance of £166 10s. The report, which was considered very satisfactory, was unanimously approved. Thereafter the office-bearers for the ensuing year were elected as follows:—Hon. president, Lord Provost Lyon; chairman, Mr. James Esslemont; vice-president, Mr. A. Kynoch, Clifton Road, Aberdeen; secretary and treasurer, Mr. M. H. Sinclair, 156a, Union Street, Aberdeen; auditors, Mr. William McHattie, solicitor, and Mr. James Terras; and a working committee of 20. It was arranged that the next exhibition be held in the Music Hall Buildings, Aberdeen, on Friday and Saturday, November 23 and 24.

SHEFFIELD CHRYSANTHEMUM.

The address of the new secretary of this society is W. Lewendon, 93, Neill Road, Sheffield. Mr. Lewendon is already known to many of our readers as the secretary of the Sheffield Floral and Horticultural Society.

ROYAL METEOROLOGICAL.

The usual monthly meeting was held on February 21 at the Society's rooms, 70, Victoria Street, Westminster, Mr. Richard Bentley, president, in the chair.

Mr. E. Mawley read his "Report on the Phenological Observations for 1905." He said that, as affecting vegetation, the weather of the phenological year ending November, 1905, was chiefly remarkable for the dryness and mildness of the winter months, the drought and frosts in May, the long spell of hot and dry weather in July, and an exceptionally cold period in October. Wild plants came into flower a few days earlier than usual until about the beginning of May, after which time they were as a rule to about the same extent late. Most of the early spring migrants, such as the swallow, nightingale, &c., reached these shores in advance of their average dates. The best farm crops of the year were those of Wheat, Beans, and Hops, while Barley, Potatos, Turnips, and Mangolds were all more or less over average. But the yield of Oats, Peas, and Hay was almost everywhere deficient, the latter being the worst crop of the year. Apples, Pears, and Plums were in all parts of the British Isles below average, whereas the small fruits as a rule yielded well. Taking the farm crops alone, the past year must be regarded as having been, on the whole, a fairly bountiful one.

THE NATIONAL CHRYSANTHEMUM.

February 20. The second annual dinner in connection with the above show was held at Hummum's Hotel, Covent Garden, on the above date. The chair was occupied by Mr. R. Ballantine (who with Mr. Prickett, the oldest member of the N.C.S., was the prime mover in starting the "market show"). Copies of the schedule for 1906 and the balance-sheet were distributed to those present. The show will be held in the Foreign Flower Market on December 12. The statement of accounts showed a balance in hand of £11 0s. 11d. The chairman in proposing "The Market Show" expressed satisfaction for the support given, and referred to the great advance the last show was on the first venture, but he (Mr. Ballantine) was still of opinion that the show might be held in January; this, however, was not the opinion of Mr. W. Cull who responded to the toast. Other members also expressed their opinions that it could not be held so late, as it would be unprofitable for growers to keep the flowers over the Christmas season. Mr. Moorman (of Victoria Park) referred to the last show as one of the most instructive and interesting exhibitions he had visited. Mr. Prickett referred to the limited number of exhibitors, and expressed a hope that more growers would be willing to enter into friendly competition.

Mr. T. Bevan in proposing "The Donors of Prizes" referred to the liberality of the chairman and other friends.

Several letters were read from those unable to attend. Messrs. Clay & Son sent 5 guineas towards this year's Prize Fund, Mr. J. Webb manager of Hummum's Hotel) promised a gold medal, Mr. M. Larsen a silver gilt medal, Mr. P. Bunyard (of G. H. Richards) a silver gilt medal, Mr. J. Kinnell (of Kinnell & Co.) a large silver medal, Mr. E. F. Hawes (Royal Botanic Gardens) a silver medal, and Mr. R. F. Felton, of Hanover Square, W., a silver bowl value 3 guineas, for the best collection of single varieties. It is confidently hoped that many more special prizes may be offered.

A pleasant musical programme was carried out under the direction of Mr. D. Ingamells and Mr. Godfrey Woodstock. Mr. D. Ingamells, who has done much towards popularising the market shows, was responsible for the dinner arrangements, which were well carried out in all details.

Schedules and other information may be had from the society's secretary, Mr. G. R. Dean, 8, Avonwick Road, Heston, Hounslow.

GARDENERS' DEBATING SOCIETIES.

CHELMSFORD AND DISTRICT GARDENERS'.—At the meeting of the above association held on Friday, February 9, Mr. Simmonds, of the Elms, Chelmsford, delivered a paper on "Vegetables." A selection of popular kinds was given, and the principal points to observe in their culture were indicated. A discussion on the various methods of forcing Seakale followed the lecturer's remarks.

At the meeting of the above society held on the 16th ult. Mr. W. C. Sprunt, of the Nurseries, Moulsham, read a short paper on Palms, including the raising of these plants from seed and their subsequent culture. Several members gave valuable information on various details of culture. Instances were given of successfully reducing the roots of plants which had overgrown their pots, and repotting them into pots of the same size as before. *H. C. S.*

At the meeting held on Friday, February 23, before a good attendance of the members, Mr. F. J. Chittenden read a paper on "The Making of New Plants." The essayist gave a number of valuable hints on hybridising, and mentioned some of the points to be aimed at when raising new plants.

BATH AND DISTRICT GARDENERS'.—The annual dinner of the above Association was held at the Full Moon Hotel, Southgate Street, Bath, on Wednesday, February 14, Mr. R. B. Cater (President) occupying the chair. The company included the Mayor, Mr. Councillor Isaacs. The Mayor submitted "Success to the Bath and District Gardeners' Mutual Improvement Association." He said gardeners stood in a very different position from artizans and mechanics, who had their set hours of work, and who were told they must do so much work and no more. The gardener worked from early morning to late at night, and his ambition was to produce something far better than his neighbour, thereby benefiting the community at large. Gardeners had no trades union, but he hoped they would be able to form an association by which, with a joint effort, they might raise their status, for the wages paid to the gardener were small compared with other trades; indeed, he was a very ill-paid man.

CRAWLEY AND DISTRICT GARDENERS'.—A paper on "Phenomena in the Life of Plants" was given before the members of this association on Tuesday, February 13, by Mr. Wm. Shepherd. The speaker explained the various functions of the leaves, stems, and branches, etc., and showed how the plants assimilate carbon from the carbonic acid gas contained in the atmosphere, absorbing the carbon and returning the oxygen to the air. Many questions were forthcoming at the close of the address, and some valuable information was gleaned from the discussion.

CHESTER PAXTON.—At the fortnightly meeting of this society, held at the Grosvenor Museum on Saturday, the 17th ult., Mr. N. F. Barnes presiding, Mr. E. F. Hazelton, head gardener to Lord Derby, Knowsley Park, Lancashire, read a paper on "Ornamental Flowering Trees and Shrubs." The subject was dealt with by the essayist in a very able manner, and he pleaded for a more extensive use of hardy flowering trees and shrubs for situations adapted to their culture. Mr. Hazelton submitted lists of the best and most suitable varieties, together with cultural methods.

REDHILL, REIGATE, AND DISTRICT GARDENERS'. A meeting of this society was held on Tuesday, the 13th ult., Mr. W. Seaman in the chair. Mr. H. Hemsley, of Crawley, read a paper on "Herbaceous Plants for Exhibition and Decoration." The paper dealt fully with the formation of herbaceous borders and the planting of the same. Mr. Hemsley also gave a list of plants suitable for furnishing the border. By means of a blackboard, diagrams were shown illustrating the paper. The introduction of a few trees such as Prunus Pissardi and Acers in variety was advocated by the lecturer. *Frederick C. Legge.*

LOUGHBOROUGH GARDENERS'.—The usual fortnightly meeting of the above association was held in the Town Hall, Loughborough, on Tuesday, February [illegible], Mr. Lane presiding over a good attendance. Mr. Titterton read a prize essay on the Potato, in which he dealt with this useful vegetable from its earliest introduction to the present day. A discussion followed. Mr. Cooke introduced a discussion on the Royal Gardeners' Orphan Fund, and an appeal was made to the members on its behalf, with the result that a goodly sum was raised in the room. It was decided to have an annual collection for the same object, and a committee was formed to carry out the object.

EGHAM AND DISTRICT GARDENERS'.—At a recent meeting of this society, Mr. W. Swen in the chair Mr. Townsend, of Sandhurst Lodge, Wokingham, gave a lecture entitled "A Ramble Round a Berkshire Garden in Summer." The remarks were illustrated by a series of lantern views. A short description of the views and cultural details of the plants depicted were given. Especially interesting were the Lily ponds and climbing Roses, which are allowed to grow as naturally as possible. The exhibits at the meeting included a well-grown group of Cyclamen and a specimen of Cœlogyne cristata with 54 flower spikes averaging five flowers to a spike. The latter was exhibited by W. A. Stearns, Esq. *T. J. W.*

GUILDFORD AND DISTRICT GARDENERS'.—The members of the above association held their usual fortnightly meeting on February 20, Mr. H. Cook, the chairman, presiding over a good attendance. Mr. Horace J. Wright, the hon. secretary of the National Sweet Pea Society, delivered a lecture on "Sweet Peas." *G. E. B.*

CARDIFF GARDENERS'.—The usual fortnightly meeting of this association was held at the Sandringham Hotel, Cardiff, on Tuesday, February 20, when F. G. Treseder, Esq., presided over a large attendance of members. A lecture upon "Our Resident Birds as Friends and Foes" was delivered by Mr. J. Mountney, taxidermist, Cardiff. The lecture was of considerable interest to the gardener, for it pointed out that though many of the 40 species mentioned in the paper were, to a certain extent, looked upon as foes to both gardeners and farmers, many were desirable friends and destroyed numbers of insect and other garden pests. Mr. Graham opened a discussion in which many took part. Mr. T. Williams won the prize of 5s. offered by Mr. Gillett for the best pot of Cyclamen, his specimen having over 30 expanded flowers. *J. Julian.*

BRISTOL AND DISTRICT GARDENERS'.—The meeting of this association, held at St. John's Rooms, Redland, recently, Mr. Jas. Lee presiding, was set apart for the official visit of the Bristol Amateur Horticultural Association. The good feeling which exists between these two societies speaks well for the interests of Horticulture in Bristol and the district. Owing to the inclement weather the attendance was not as large as it would otherwise have been, but those who did attend were amply repaid in the lecture, illustrated by lantern slides, given by the visitors' president, Dr. Colston Wintle, on "Insects." Dr. Colston Wintle gave many useful hints concerning the pests of our gardens, and at the close of his lecture received the cordial thanks of the Bristol Gardeners. *H. K.*

CROYDON & DISTRICT HORTICULTURAL.—The members of this society assembled on Tuesday, the 20th ult., at the Sunflower Temperance Hotel, to hear a lecture delivered by Mr. T. Crosswell, Eden Park, on "The Culture of Herbaceous Calceolarias." Seeds should be sown between May and August, according to the size of plant.

required. It usually takes about eight or ten days for the seeds to germinate, and if the soil appears dry immerse the pots in water till it shows through the surface; on no account water overhead. A little ventilation may be given in about a week, and gradually increased day and night. When large enough pot the plants singly in a compost of equal parts loam, leaf-soil and fine sand. The last potting may take place in February. A little soot-water or weak solution of manure will benefit the plants when they are well rooted. If large specimens are required the central spike should be pinched out. Do not select all the larger seedlings, for the more uncommon colours will often be found in the lesser seedlings. A discussion by the members followed.

ANSWERS TO CORRESPONDENTS.

Abies nobilis: *R. H. S.* Your tree is affected with gouty disease caused by an insect allied to Chermes, which causes American blight in Apples, and which also (or a near ally) occurs on the spruce and on the larch (see fig. 54). Petroleum emulsion vigorously applied might do good. Cut out and burn the affected branches so far as you can.

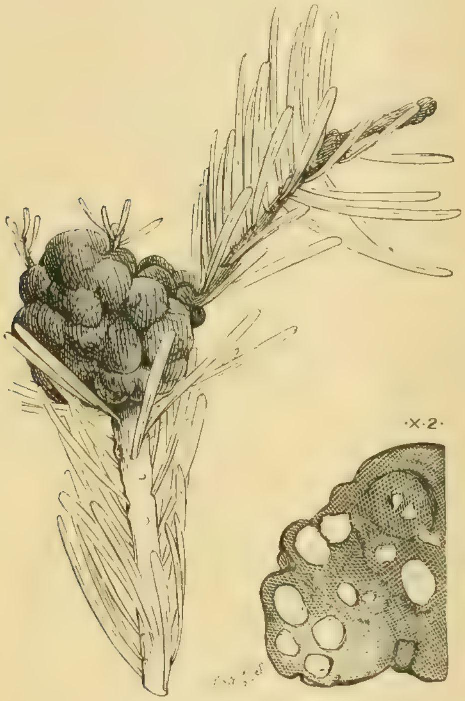

Fig. 54.—Gouty disease of the silver firs.

Arrangement of Cauliflowers for Exhibition: *F. L. S.*, *Hants*. The usual method is to make a little platform about 9 inches in height, using a board 8 inches wide and as long as is necessary. To this board is fixed a solid piece of boarding, shaped like a triangle, as high as may be necessary for the exhibit of the Cauliflowers. Incline this triangular piece a little backwards and there will then be something to build against. Place on the platform a thick coating of green moss, and on this lay three Cauliflowers, leaving 1 inch between each "head" for Parsley. Make the spaces solid between the Cauliflowers by packing in some moss of any kind to the level of the "flower," then place two more "heads" on the top and repeat the packing, &c., until the whole is finished. After this has been done place some finely selected Parsley between the Cauliflowers and over the whole surface of the moss. Woodwool is sometimes used instead of the moss, but it is not to be preferred. Be careful to put a wedge or block under each of the outer Cauliflowers in the bottom row to prevent them from spreading, otherwise there is always difficulty in placing them well.

Camellias from the Open: *F. G. B.* We do occasionally meet with gardeners who are not aware that the Camellia will flower in the open air in this country. Those who knew the Royal Horticultural Society's Chiswick gardens, will remember the border near the old Paxton House that contained many good specimens of this plant, which flowered freely annually. From the flowers you send it is evident your plant is in a favourable position.

Dieppe, F.: *B.* This botanist visited Mexico in 1828, accompanied by C. J. W. Schiede.

Ficus elastica: *J. S. F.* Ficus elastica in fruit was fig. red in *Gardeners' Chronicle*, September 19, 1874, p. 359. Eucalyptus Globulus, in common with many other plants, possesses a primordial or youth-form of leaf which is quite different to that of the adult stage. The well-known Retinosporas of gardens are but the youth-forms of species of Conifers, principally of Cupressus or Juniperus.

Hyacinths, etc.: *Enquirer.* There is nothing in the specimens themselves to explain why the bulbs have not produced roots. Provided the rooting medium afforded the plants was a suitable one the cause of failure must be in the bulbs, which may have been insufficiently matured last season.

Market Gardening in Guernsey, or in England: C. *B.* We are not surprised to know that, having asked various growers in Guernsey and England which is the better place to establish a nursery, you have elicited contradictory opinions. It is a case in which you will have to decide for yourself, simply because no final and satisfactory answer could be given to the question. Market gardening exists, and has been found to yield a remunerative return in Guernsey and in England. Therefore, make up your mind in which place you would prefer to reside, and having done that go to business with a will and you will deserve to succeed. But having determined the locality in which you will make the start, be very careful in the matter of choosing premises. Carefully examine them from every point of view to see how suitable or otherwise they may be for your purpose. If a lease is to be taken up, let every condition be scrutinised beforehand.

Names of Fruits: *F. T. B.* Claygate Pearmain.

Names of Plants: *M. H.* Dendrobium parcum, a very interesting species, owing to the movable, spring-like labellum. See the illustration and description published in these pages on May, 20, 1905.—*J. J. F.* Osmanthus ilicifolius, but there are no flowers.—*H. S.* 1, Phillyrea angustifolia; 2, Tamarix species, probably T. gallica.—*J. C.* 1, Rhododendron Countess of Haddington; 2, R. Veitchianum; 3, R. formosum: 4, Acacia armata.—*H. W.*, *Trevince.* Photinia serrulata syn. Cratægus glabra.—*J. W.* Stauntonia hexaphylla.—*A. C.* Both species of Euonymus; we cannot tell which without the leaves.—*C.*, *Bridgwater.* Lissochilus streptopetalus.—*W. C. M.* Odontoglossum pulchellum.—*R. C.* Hippeastrum, near to H. equestre. Not indigenous in Burmah, and probably a garden hybrid of H. equestre crossed with H. vittatum.—*A. Y. L.* 1, Scaphosepalum ochthodes, often called Masdevallia; 2, Ornithidium confertum, a native of the West Indies.—*W. W.* Anemone coronaria, double flowered variety.—*F. T.*, *Bourton.* 1, Pinus (next week); 2, 3, 4 and 5, all forms of the common Spruce, Picea excelsa.

Narcissus: *A. K.* The plants that were first placed indoors failed because heat was applied too early. N. poeticus will not respond to hard forcing, though some of the varieties may easily be got into bloom in February. The bad results of applying heat to these plants in November was explained by our correspondent Mr. E. H. Jenkins, in an article published in these pages on October 22, 1904, p. 286.

Notice to Leave: *T. R.* A head gardener is generally considered to be entitled to a month's notice. Consult a solicitor, who will see if there are any special circumstances in your case. Why do not gardeners come to an agreement with their employers at the time an engagement is made?

Peas and Beans during August and September: *T. H. G. Ireland.* To ensure a supply of culinary Peas thus late in the season you will need to sow as for a late crop. Sow a portion of the seeds in May and make other sowings in the third week of the month and at the beginning of June. Of the varieties you mention use Alderman and The Pilot for the earliest sowing, and follow with Gladstone and The Duchess, the final sowing being made with Gradus and Early Bountiful. These should provide a succession through the months you mention, and as the climate of Ireland is more humid than that of this country, the plants will not be so likely to suffer from drought as late crops do here. Late crops of Peas require much attention in the matters of watering and mulching. If these details are neglected the crop will be small and will scarcely pay for the trouble of growing. Sow the Kidney Beans at the beginning of June. For the bog garden it is not advisable to use artificial manures, but such substances as peat, peat manure, decayed leaves, or any substance that will furnish humus to the soil.

Parsnips eaten: *G. B. Marple.* The roots have probably been eaten by voles, which will remove the entire centre portion and leave the skin in the form of a shell. Fig. 55 shows a root that has been thus hollowed by these depredators.

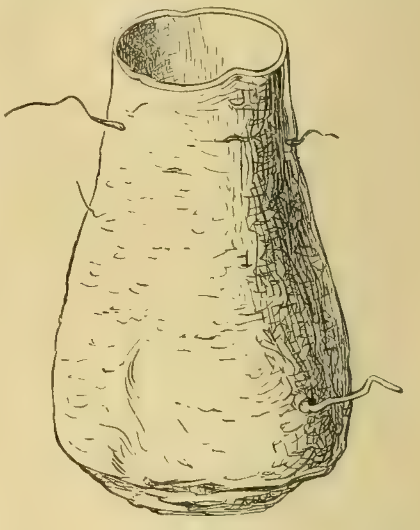

Fig. 55.—Parsnips eaten hollow by voles.

Soot: *R. M. C. L.*, *Nice.* See the remarks on p. 128 of our last issue in the reply to *Enquirer.* You may make the soot water from freshly obtained soot, and if used only in a clear condition, the liquid can be applied to the roots of most pot plants with satisfactory results. If, however, the liquid is not applied in a clear state, it will leave a sticky deposit on the surface of the soil, which will to some extent prevent aeration, which is necessary to the well-being of the roots.

Tuition: *J. R. G. G.* We do not know any particular firm that would take your son for the purpose of teaching him the business, but as you are prepared to pay a premium there should be little difficulty in obtaining the information by inserting an advertisement.

Tulips: *J. W. P.* The shrivelling of the flower buds is doubtless due to the forcing of the plants into flower before their natural season. Some have withstood the strain and succeeded well, but others, being less well fitted, could not adapt themselves so perfectly to the unnatural conditions. In the forcing of bulbs, and indeed of most plants, the gardener must always bear in mind that he is taking liberties with nature, and therefore, in order to avoid causing the plants a check, or hurrying them beyond what they will bear, the forcing must be done very gently, allowing the plants as long a time as possible in which to develop their growth. You may have noticed that varieties of Narcissus poeticus if planted very late in the season often fail, just as the Tulips have done, and this may be due to the plants being unduly forced, owing to the season having further advanced; the sun's rays are much hotter than they were when growth would naturally have been made. In this case, however, it has to be remembered that the bulbs having been kept out of the ground for so long a time have suffered in consequence, and were weaker than otherwise they would have been. We believe that the variety Yellow Prince is often flushed with orange colour, and occasionally even with red as are yours.

Communications Received.—W. W. Clarke (your letter has been forwarded)—G. W. S.—D. Hutchings, Cape Town—E. Webb & Sons—R. L. H., with thanks—J. H. V.—Pulham & Son—E. J. A.—W. H. D.—S. K.—W. W.—G. W.—C. E.—J. S. & Sons—C. N. M.—K. A.—Sutton & Sons—W. W.—Lord A.—The Country Press—W. B. H. & Sons.—A. B.—J. J. W.—W. D.—E. J.—F. M.—C. H. P.—R. L. H.—R. P. B.—H. W. W.—C. T. D.—E. M.—T. W. G.—W. H. C.—G. F. H.—F. C. E.

For Market Reports, see page xvi.

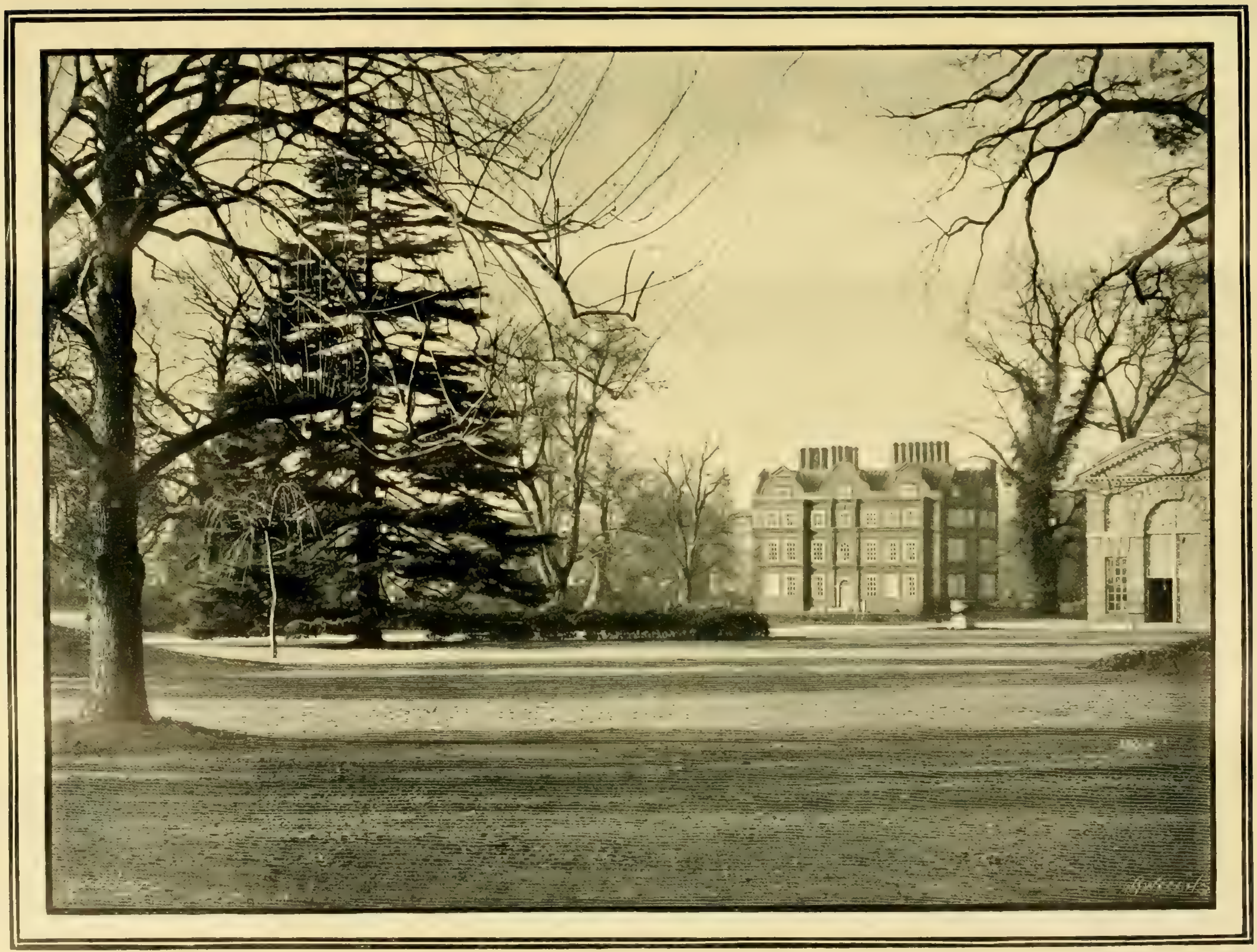

Photo by E. J. Wallis.

VIEW IN THE ROYAL GARDENS, KEW, SHOWING IMPROVEMENTS EFFECTED IN THE VICINITY OF KEW PALACE.

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THE
Gardeners' Chronicle

No. 1,002.—SATURDAY, March 10, 1906.

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THE AMERICAN CARNATION.

AFTER the splendid exhibits seen at the Royal Horticultural Hall on February 13, it is scarcely necessary to say that, for winter flowering, the American raised Carnations are far in advance of our own. When these were first introduced into this country considerable prejudice existed against them on account of their fringed petals. And when first they flowered there was nothing remarkable in the blooms. But they have improved greatly, and some growers who had discarded them have again re-stocked them. The first introductions were not equal to such as were seen at Westminster on the 13th ult., although I find that such early varieties as Daybreak, W. Scott, and others are still grown. It was after the introduction of the variety Mrs. T. W. Lawson that English growers first begun to cultivate them extensively for market. This standard variety did not appear very promising judged by the first flowers seen; but after becoming properly established it improved greatly. Very rapid strides have also been made with other varieties, and from the reports of the American Carnation Society's Exhibition, further advance has been made, and we may expect some more fine varieties next season. English raisers have also been busy, for although few novelties were seen at the recent show, we have some good English sorts which have the vigorous habit and long stiff stems characteristic of American varieties. The exhibit awarded the Gold Medal at the above-named exhibition consisted entirely of American sorts. There were not many varieties, but the exhibit contained upwards of 1,200 blooms, the majority of which were perfect specimens. They were arranged in tall vases, the only garnishing being a few sprays of Asparagus. The exhibitor, Mr. Engelmann, has not been engaged in the culture of these flowers for any considerable period, but he is evidently highly successful with them. Mr. A. F. Dutton was one of the first of the English growers to show Carnations in proper American style. He did not exhibit so extensively as Mr. Engelmann, but his blooms were equally good in quality. Mr. S. Mortimer's display was also noteworthy, especially as he exhibited good plants in addition to flowers. Several Guernsey florists showed remarkably fine blooms of a limited number of sorts. Except in a few instances the same varieties were seen in all the exhibits. It may be of interest if I refer to their relative merits under the different shades of colour.

White Varieties.—There are at least half a dozen good "Whites." Glacier was the first white variety with which I became acquainted. It is still grown, but there are others which are superior. The Belle is a full-size flower, and possesses a very fragrant perfume. Queen Louise still remains a favourite with some growers. White Mrs. T. W. Lawson has stiff stems, although they are not so long as in other kinds. Lady Bountiful I should select as the best white variety, the flowers being of perfect form. I find this variety secured first place among "Whites" in a recent competition in America. A white sport from Enchantress may take the lead later on. Mr. Dutton, with whom this sport occurred, has named it "Iver White," but I find the same sport has occurred in America, where they call it the White Enchantress.

Blush Coloured and Pink.—Enchantress is a long way ahead of any blush coloured variety—in fact, it takes the lead among all American Carnations, and during the past two years I believe blooms have been seen in Covent Garden market almost every morning; it appears equally good for growing in summer as in winter. Alpine Glow is good, and Fair Maid is another most desirable variety; it is deeper in shade than the Enchantress. Floriana is slightly deeper than the last-named. I find it varies in quality, but have seen good specimens of it. Fiancée, which gained high honours in America last year, has not proved altogether satisfactory. Some American growers condemn it unmercifully, and I was inclined to do the same, for, until the recent show, I had not seen satisfactory blooms, although it had been brought to my notice many times. As seen at Westminster, however, in Mr. Engelmann's exhibit in three large vases, it was very fine; all were good, but perhaps a little inclined to split, yet, taking them as shown, one must admit that it is a variety of great merit. Coming to Mrs. T. W. Lawson, which is of a deep cerise pink colour, I need say but little, as it is already well known. I have heard it said that it is not so well grown here as in America; but this was contradicted by an American grower who went through Covent Garden market with me some time since. In Nelson Fisher we have a variety of a deeper shade of colour, with large blooms and strong growth. The plants of this variety shown by Mr. Mortimer were very robust, while the blooms of this from all growers were good (see p. 157).

Scarlet.—Of these there are at least half-a-dozen first-class varieties, and it is difficult to discriminate. Christmas Eve, which recently gained an Award of Merit from the Royal Horticultural Society, is certainly one of the best, perhaps not quite so vivid in colour as some, but very free flowering and having perfectly-shaped flowers. The Cardinal, which also gained an award last November, is of a deeper shade of colour still. It appears one of the most promising. Flamingo is very vivid in colour. It is a fine flower, but is a little inclined to become scalded, while the terminal flowers from strong growths generally burst. Flowers developed from side shoots, however, possess good calyces. Adonis is another fine scarlet.

Crimson.—General Maceo was the first crimson variety I knew. The flowers, though small, are very bright, and it is free in blooming. Harry Fenn is a decided improvement on the last-named, although Governor Roosevelt comes very close, and is preferred by some florists. Harlowarden should, perhaps, take first place in this section. It has been shown in very fine condition by all growers. In Messrs. T. S. Ware's, Ltd., exhibit I particularly noted this as one of the best, and it has been good all through the season.

Striped Varieties.—Variegated Lawson and Mrs. M. A. Patten run each other very close for supremacy, but I should give the first place to the last-named, which has been good from all sources.

Yellow.—At present the demand exists for a good "yellow." Dorothy Whitney, a deep yellow flower with pink stripes, is the only yellow variety I have seen. Although bright in colour the flowers are small. It appears that American growers have nothing much to offer in this colour. The above variety crossed with Miss Audrey Campbell or Cecilia should give good results.

Prosperity should be added to the list. This is a variety with large, sweet-scented flowers, having a white ground-work mottled or splashed with pink. They are developed on good stems. There may be other varieties deserving mention, but the above are those I have noted during the past two years at shows and in the market.

CULTURE.

A few years ago I cultivated about half a dozen of the American type with others of English varieties, and I found that Mrs. Lawson, in particular, started away much more strongly in the spring than our own type, and made excellent growths suitable for the making of cuttings. When growing actively they require plenty of pot room, and I believe that the American system of planting them out in the summer-time and again on benches when taken under glass in the autumn is a great factor in maintaining a vigorous stock. The planting on benches has been tried in England, and although I have seen them doing well under this treatment, I find opinions of various growers are divided on the subject. It is certainly possible to grow them well in pots, but they require more pot room than is usually given to English varieties. To obtain a vigorous stock the first thing requisite is to see that strong, healthy cuttings are secured; and for this purpose some of the stronger plants should be selected and potted into larger pots, removing all the flower buds as they appear. Another plan, if convenience allows, is to plant a certain number for stock plants. It may not be necessary for the bulk of the stock to be so treated, but some at least should have special attention.

With regard to the best time for propagating, I have always found it is of more importance to wait and secure good cuttings than to take them at any particular time. From January until the end of March the bulk may be secured, and the best cuttings are made from the short, thick, side shoots. I have seen them rooted well on an open bench, but I have succeeded best with a close case frame provided with a moderate bottom heat and a cool surface. The cuttings should never be allowed to become withered. I prefer to take the cuttings early in the morning, and the plants should be looked at on the previous night and well watered if dry.

When the cuttings are rooted in a close frame, they must be removed as soon as the roots form, for they must never be allowed to become drawn or weakened in growth by keeping them in too close and warm an atmosphere. At no stage can Carnations be forced, sunshine and warmth may develop them, but they must have ventilation, plenty of room, and all the sunshine possible. The affording of larger sized pots as the plants require them, and of keeping them quite free from all insect pests and fungoid diseases are important matters. The light, cheaply built houses of modern market growers are far better suited to the requirements of Carnations than are the heavy, expensive structures seen in many private establishments.

In the above notes I have confined my remarks to the American varieties, but I do not mean to infer that we have no good English raised sorts. I hope to refer to these, and to my experience in hybridising them in a later note. *A. Hemsley.*

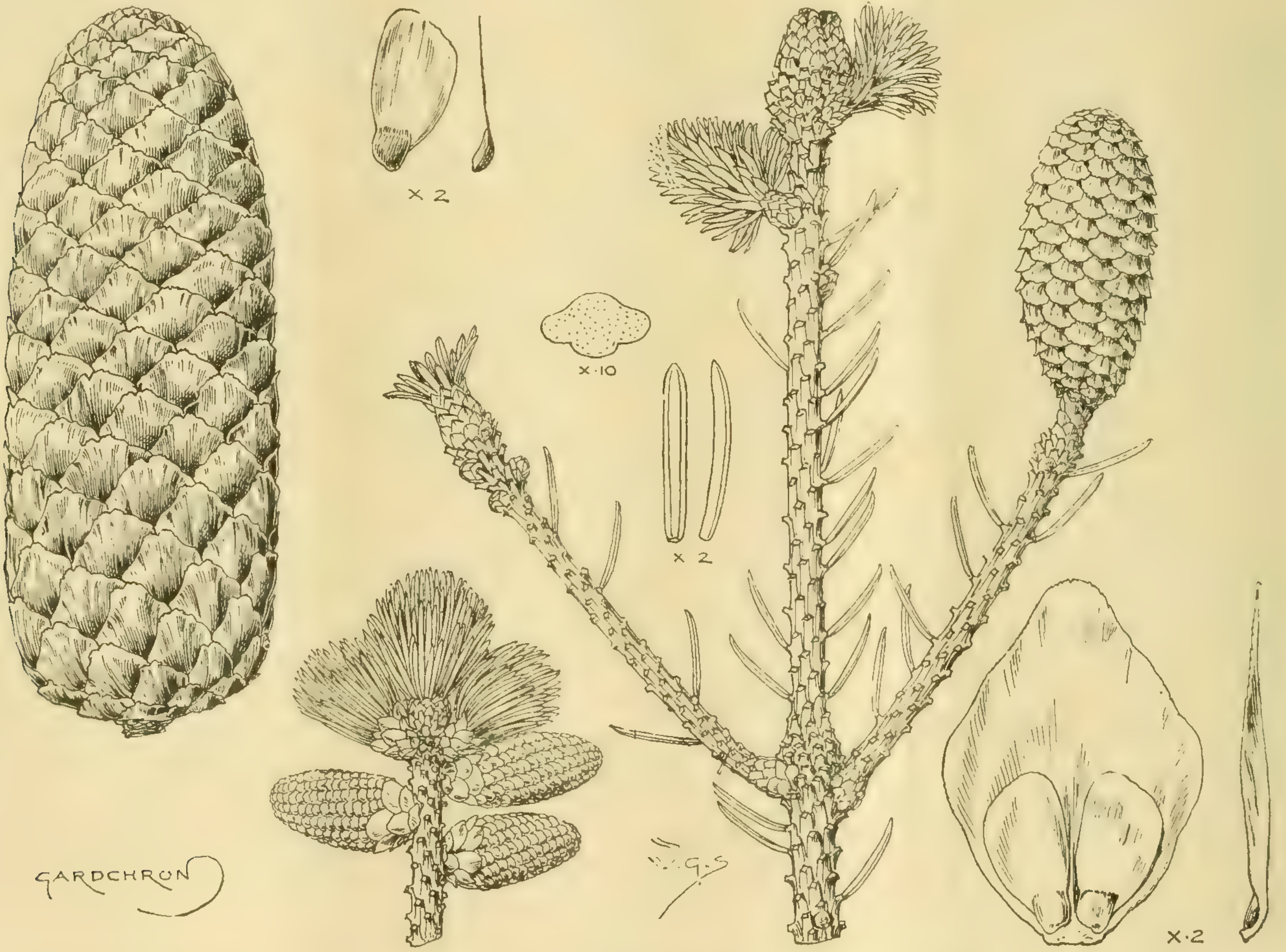

Fig. 56.—Picea montigena.

On the left a mature cone, real size; on the right a branch nearly denuded of leaves in drying, and bearing an immature purple cone. Other details show tufts of young leaves and male-catkins, scale with seeds, detached seed, leaves and transverse section of leaf. The figures ×2, ×10 show the degree of enlargement. The young branches are more hairy than shown in the figure.

CHINESE CONIFERS.

Several species collected for Messrs. James Veitch and Sons by Mr. E. H. Wilson in his first journey to China were described and figured in these columns in 1903, and a complete enumeration of the species was given in the *Journal of Botany*, August, 1903. Mr. Wilson's second journey was even more productive, as will be gleaned from the interesting notes on his journeyings now in course of publication in these columns. Messrs. Veitch have been good enough to place in my hands for identification the specimens of Conifers procured by their zealous and intelligent collector. They comprise many new species, which are very interesting from the point of view of the botanist and the geographer, whilst some may prove of importance from the standpoint of the forester, and even from their decorative character. Some of them, of which Mr. Wilson was fortunate enough to secure seed, are already in cultivation in Messrs. Veitch's nursery at Combe Wood, and of these we propose to publish descriptions and illustrations in these pages. The drawings have been made for us with great fidelity by Mr. Worthington Smith. It must be borne in mind that the drawings have been taken from herbarium specimens, from which many of the leaves have become detached in drying, so that the reader must exercise his imagination and clothe the bare twigs with dense foliage. This is not a difficult matter, as the leaf-scars clearly indicate the position of the leaves. It may here be said that the form of these leaf-scars and the cushions "pulvini" beneath them, especially in the Spruces (Picea), should be carefully examined, as they often afford some means of discrimination when others are not available. *Maxwell T. Masters.*

Picea montigena. (Mast. sp. nov.)* Fig. 56.

This is a species noted by Mr. Wilson as very rare and growing near Tatien-lu, at an altitude of 10,500 feet. It attains a height of from 20 to 60 feet, and has the general characters of a Spruce. The older branches are grey, the younger ones slightly setose, and of an orange colour. The buds are broadly ovoid, covered with light brown, oblong-ovate, subcoriaceous scales. The leaf-cushions or pulvini are ascending, straight, constricted near the tips, and symmetrical, not oblique near the apex. The leaves are about 1 cent. long, linear, curved, four-sided, with prominent ridges, stomatiferous on both surfaces, and with an acute or a somewhat obtuse apex bevelled or sloped off on the dorsal side. The male catkins are solitary on the sides of the branches near the ends, each about 2 cent. long, oblong, anther-scales, scoop-shaped, purplish, denticulate. Young female cones terminal erect, with reflexed, purplish-violet, broadly-oblong scales.

The ripe cones, 11 to 12 cent. long, 5 cent. lat., scales subcoriaceous, ascending, oblong, ovate, undulate, light brown, flushed with purple.

The scales of the ripe cone retain something of the purple colour of the young scales, but are completely reversed in direction.

Judging from its habitat, the species will probably prove hardy. The rich colour of both the male and the female inflorescence gives it an ornamental character. The manner in which the young cone-scales are at first recurved and subsequently become erect is worthy of remark.

Picea complanata. (Mast. sp. n.) Fig. 5..

This is a handsome Spruce Fir discovered by Wilson in Western Szechuan, where it forms forests at an elevation of from 5,000 to 8,000 feet. The timber is used for building purposes. It belongs to the section Omorika, having the blue surface of the leaves uppermost; but the leaves, though scarcely four-sided, are not so markedly flattened as in most of the species of that section. The younger branches are glabrous and of an orange-brown colour. The leaf-cushions or "pulvini" are prominent, oblong, unsymmetrical beneath the apex, so that the somewhat three-sided cicatrices or leaf-scars seem to be beneath the apex, owing to the greater growth of the upper or axial side of the pulvinus. This is especially noteworthy on the very young shoots, but is less apparent on the older shoots. The buds are ovoid-conic, covered with rich brown, shining, leathery, oblong scales. The leaves are about ¾ inch long, linear acute, not apiculate, somewhat flattened, but with the nerves prominent on both surfaces, glaucous and stomatiferous on the upper surface, and bevelled near the apex on the green dorsal surface. The leaves are thus like those of P. ajanensis in having the glaucous surface uppermost, but are less flattened than in that species. Ripe cone between 4 to 5 inches long, oblong-cylindric. Scales slightly appressed, slightly convex, transversely oblong or rounded, upper border slightly everted denticulate. Seeds with a ferruginous, membranous, oblong wing.†

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* Picea montigena, Mast. sp. nov., fig. 56:—Arbor 20-60 pedalis, *ramulis* novellis birtulis pallide aurantiaco-fuscis, *ramis* vetulis hirtulis seu glabratis fusco-cinereis. *Pulvini* prominentes parum condensati, ascendentes, recti, oblongi superne constricti.

Gemmæ oblongo-ovoideæ squamis subcoriaceis ferrugineis obtectae.

Folia quadrangulata 10-12 mill. long, 1⅓-2 mill. lat. arcuata, linearia, dorso prope apicem cartilagineum fastigata, nervo medio utrinque prominente, undique stomatifera. *Amenta* mascula lateralia subsessilia circa 2 cent. long, 1 cent. lat. cylindrato-oblonga, squamæ antheriferæ trulliformes violaceæ ad margines superne lacerata.

Strobili faeminei juveniles terminales ascendentes rubroviolaceæ, squamæ applanatæ rotundatæ laceræ arcte recurvatæ, *strobili maturi* cylindrato-oblongo-obtusi 10 cent. long., 4 cent. lat. Squamæ appressæ subcoriaceæ oblongæ truncatæ superne undulatæ.

China Occ. prope Tatien-lu, ad alt. 10,500 ped. *Wilson*, 3027.

THE MAKING OF ORCHARDS.

III.

(Concluded from page 100.)

PLANTING THE TREES

Although the period during which fruit trees may be planted extends from the time when the leaf falls until the spring season has really begun, much depends upon the nature of the season itself, as also upon the kind of weather at the precise moment of planting. For instance, in a winter such as that through which we have nearly passed, orchard planting has been possible in most parts of the country upon five days out of every six, because only now and again has the frost been of sufficient severity to interfere with operations. Frost, however, is not the only thing that interferes with the work at planting time, for an excess of rain in a badly drained or heavy soil renders the ground quite unfit for labour of this kind, making the work far more laborious and unpleasant, and giving the trees a send-off of the worst possible description. A fruit tree which is expected to settle itself in a mixture of soil which approaches more nearly the consistency of a mud-pie than anything else, is very much handicapped at the start, for the wet soil thrown on to its roots will form a cake round them like so much mortar, and so, as it were, suffocate them at the very beginning, if it does not actually destroy many of the more delicate fibres. Treatment of this sort, although the actual health of the tree may not be apparently affected, is causing unseen damage to that very part of the tree's constitution which, from a fruit-bearing point of view, it is most necessary to protect, and the effect will be seen at a later period when the fruit spurs on the branches fail to develop as they otherwise should. Cold, windy weather is also a bad period for tree-planting, not only because it dries up the soil on the surface, but also on account of the damaging influence to the exposed roots of the trees got ready for planting. Mild, open weather is, of course, the best of all; but the planter must be guided by the nature of his soil, remembering that a good start is in this matter, as in many another, more than half the battle. Fruit trees will do no harm if kept out of the ground for a week or so, or even longer, in the case of severe frost, provided that they are well protected in the meanwhile. The best way to do this, supposing that for one reason or another they cannot at once be transferred to their permanent quarters, is to lay them carefully together in an almost perpendicular position against a wall or hedge in some sheltered corner out of the way of cold winds, covering up the roots as one goes along with some dry litter, leaves, sand, or garden mould, to protect them from frost and drying winds. A moderate amount of rain will do no harm, but should spring be approaching it is advisable to keep the roots from getting too moist, as such a condition might excite the trees to premature growth, which will only cause a check when they are removed for planting. If, therefore, trees waiting to be planted can be stored under cover, so much the better, although, under ordinary circumstances, any odd sheltered corner will do. Very late planting in the spring is not to be recommended, because the buds which have already begun to swell upon the trees are apt to be knocked off in the process of removal and replanting; and the trees, in which the sap is already active, will receive a severe check unless very expeditiously handled. In a late spring one can sometimes continue planting a fortnight or three weeks later than in the average season, and there are certain varieties which do not show signs of growth until long after the usual period of budding. Such kinds as these will receive no harm from late planting, and wonderful things can be done even when the trees are very far advanced in the spring. Experiments of this sort are, however, for the amateur who has, perhaps, only a dozen or two trees to handle, and not for the orchard planter who may be dealing with hundreds. It does not matter very much what the weather may be after planting, but the trees should be well settled in their positions (and an extra look round taken to see that all are securely tied to the stakes) against the coming of the equinoctial gales towards the end of March.

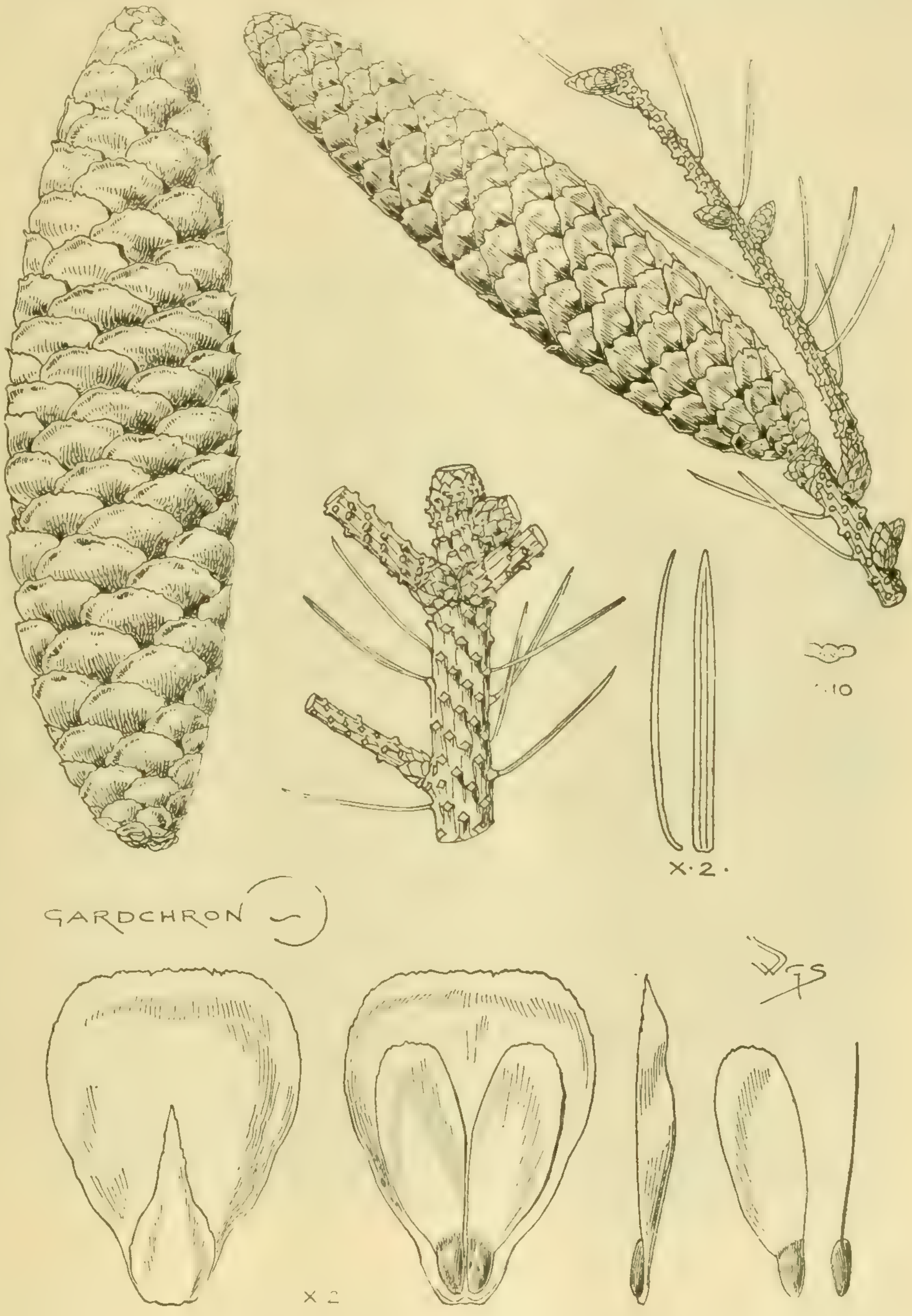

Fig. 57.—Picea complanata (see page 146).

Showing to the left a mature cone, to the right a shoot with buds, but mostly denuded of foliage and an immature cone. In the centre are shown a portion of an older shoot with leaf seen from the front and from the side and magnified two diameters; the cross section magnified ten times shows the flattened leaf. Beneath are views of the cone-scales and seeds magnified two diameters. The bract shown at the back of the scale was observed by the artist.

Drainage.

The question of drainage is an important one in the newly-planted orchard, but it is a matter which can very well be left till the trees are planted. The laying of pipes is always an expensive process, and very often, after considerable time and money have been spent in this direction, the results are not wholly satisfactory. It is, indeed, a mistake to plant trees on any soil which is at times in such a waterlogged condition that drainage by means of pipes is necessary. The money will at all times be better spent in the purchase price or in the annual rent, unless, indeed, in the latter case, one can get one's landlord to share the expense—usually by no means an easy matter. The proximity of pipes in the neighbourhood of fruit trees is, however, not at all desirable. The roots will soon find their way into the pipes, with the result that the former will often be lying in water, and the latter will be displaced or broken, thereby upsetting the whole system and defeating the chief object of the pipes. Drainage may be necessary here and there in orchards which, for the most part, are well drained, and if the water in times of heavy rainfall happens to collect in small depressions on the surface, some means must be taken to carry it away. Usually a few open ditches will do all that is required; but if pipes are really necessary they should be laid so far as possible away from the roots of the trees between the rows. Surface water which only lies about for a few hours will do no harm; it is that which lies below the soil on the top of an impenetrable subsoil which does damage to the roots. The necessity therefore of obtaining at the outset a naturally well-drained soil with a porous subsoil is readily apparent. Thorough cultivation before planting will also do much to keep the ground in good condition for many a long day, and if occasion should require it the use of the subsoil plough will work wonders in a soil which is not over well drained in the first instance.

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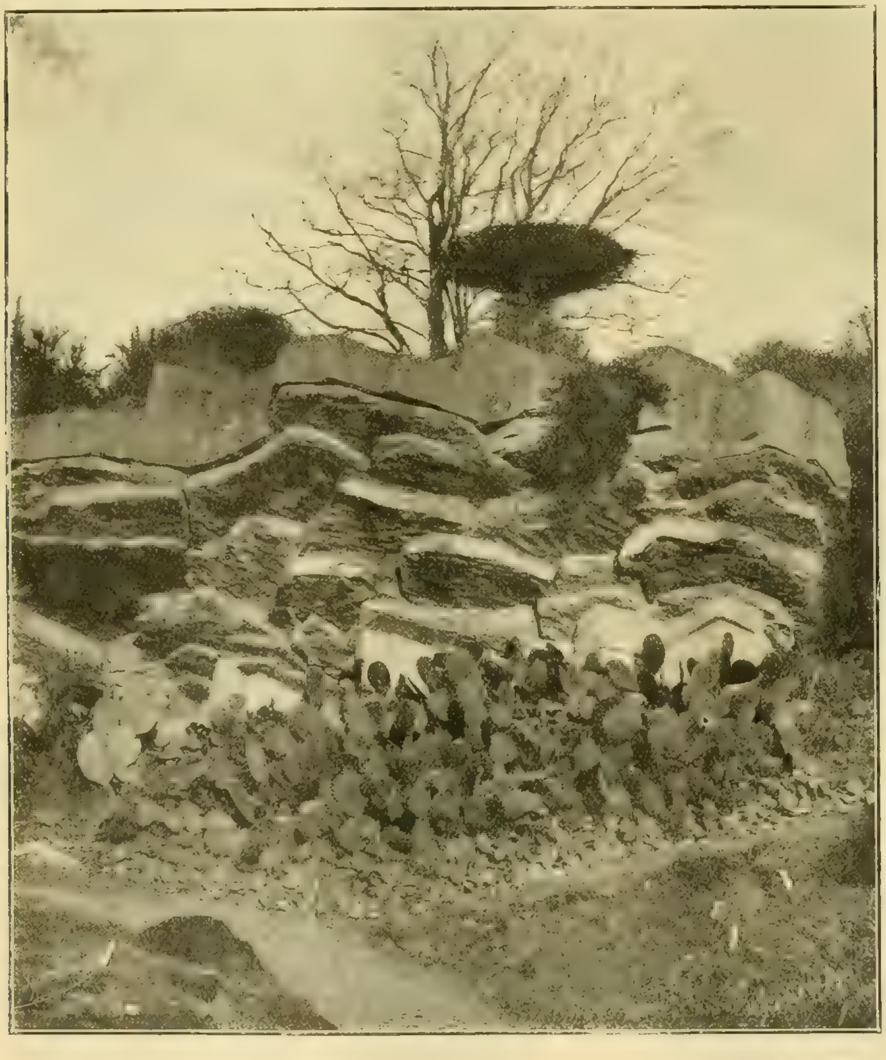
† Picea complanata, Mast. sp. nov., fig. 57:—Arbor 40-100 ped. *Rami* glabri, fulvo-aurantiaci. *Pulvini* prominentes superne oblique dilatati, cicatrices patentes subangulatæ. *Gemmæ* ovoideo-conicæ, squamis coriaceis castaneis late ovato-acutis opertæ. *Folia* 20-22 mill. long. 1 mill. lat. linearia acuta planiuscula, nervo medio utrinque prominente, superne glauca, subtus viridia, versus apicem fastigata.

Strobilus immaturus purpurascens maturitate [illegible] 11 cent. long. cylindrato-conicus. *Squamæ* brunneæ transverse oblongæ seu rotundatæ serrulatæ, margine paullum eversæ.

Seminis alâ membranacea pallide ferruginea, oblonga [illegible]

China Occident. in silvis prov. Szechuan, ad alt. 5000-8000 ped. ubi legit Wilson, nn. 3030, 3031! P. Morindae necnon P. morindoidei affinis, differt autem foliis strobilorumque squamis.



[Photo by J. Gregory.

FIG. 58.—OPUNTIA ENGELMANNI IN THE GARDENS AT LEONARDSLEE, SUSSEX.

WEEDING.

The trees once planted, very little remains to be done for some time to come, and the planter, if the work has been well carried out and all finished in good time, may rest a while and survey his work with satisfaction. The first thing that is likely to cause him trouble will be the appearance of weeds, and here let it be said that, so soon as they begin to make themselves evident, they should be destroyed whenever the weather is favourable. Many people defer weeding while the plants are yet small, under the mistaken idea that it is waste of time to go all over the ground while only a few weeds are apparent here and there. But it should be remembered that for every small weed visible to the eye there are a thousand which will become apparent within a few hours after the first shower of rain, and that, should a wet period set in, these may in the space of a few days grow to a size greater than the hoe can cope with effectively. When the weeds are only small so that a hoe run lightly through the ground just below the surface will uproot them, one good man can get over a surprising amount of ground in a little time; but if the work be deferred until each individual weed requires a chop of the hoe to itself, the same man will show but a poor result for a day's work, and the job will never be so effectively done. Small weeds soon wither, and the soil falls readily off their fragile roots, so that they quickly die; but the big weeds, which the hoe can seldom destroy unless it be dug deeply into the soil, will start growing again, even in moderately dry weather, nourished, as they are, by the soil clinging to their matted roots. If time presses and labour be scarce, let the work at least be done often in the immediate vicinity of the trees, for it is here that it is of the most importance. The hoe is the best tool for the purpose, for it destroys the weeds, and at the same time keeps the surface in a good friable condition, thus keeping the ground beneath in a moist state during summer, and letting the roots of the trees obtain the full benefit of sun and air. A light fork is useful in the autumn for forking in the remainder of previous top-dressings of manure, but the tool must be in the hands of a careful man who understands the delicacy of the work in which he is engaged, and who will not go deep enough to draw the fibres out of the soil and so destroy them. Horse tackle is best kept out of the orchard altogether, for it is almost impossible to prevent damage to the trees either by the horse or the implement that he draws behind him. Such treatment is only permissible where trees are planted very wide apart, and even then it requires a careful man to undertake the job.

As for pruning, which is a matter too lengthy to be entered into on this occasion, none will be needed the first season, for the trees, whatever their size, should come from the nursery ready pruned before lifting, and it will be better to let them go ahead the first summer as fast as they like, cutting back rather hard the second season after planting, if necessary. Careful and scientific pruning, thorough cultivation, and constant attention to the attacks of blight in its many forms will, for the future, be the chief care of the orchard owner; but all these things come rather under a heading different to that which concerns the original making of orchards. *East Sussex.*

THE ROCKERY AT LEONARDSLEE.

OPUNTIAS succeed well in the rock garden at Leonardslee, Horsham, the residence of Sir E. G. Loder, Bt., where the species cultivated include O. monacantha, O. glauca, and O. Engelmanni. The species last named is represented by a large group which measures 8 feet from front to back and 10 feet long (see fig. 58). It is growing on a rather sharp slope which faces to the south, and having the natural protection of a large piece of overhanging rock. The Opuntias are grown in a specially prepared soil composed of loam, leaf-soil and sand in equal parts with a little lime-rubble added. The photograph from which the illustration has been prepared was taken in January, and shows the plants to be unprotected, as they are during the whole of the winter. There are also several very fine plants of Saxifraga longifolia. The one illustrated at fig. 59 measures 11 inches across, and is grown between two large stones having about 2 inches of soil between them. This soil is composed of light loam with a little wood ashes added, but the plants succeed equally well in any light, sandy soil in several well-drained positions on the rockery. The species flowers at about July, and the illustration at fig. 60 shows how remarkably well it succeeds in the Jardin Alpin d'Acclimatation, Geneva.

ORCHID NOTES.

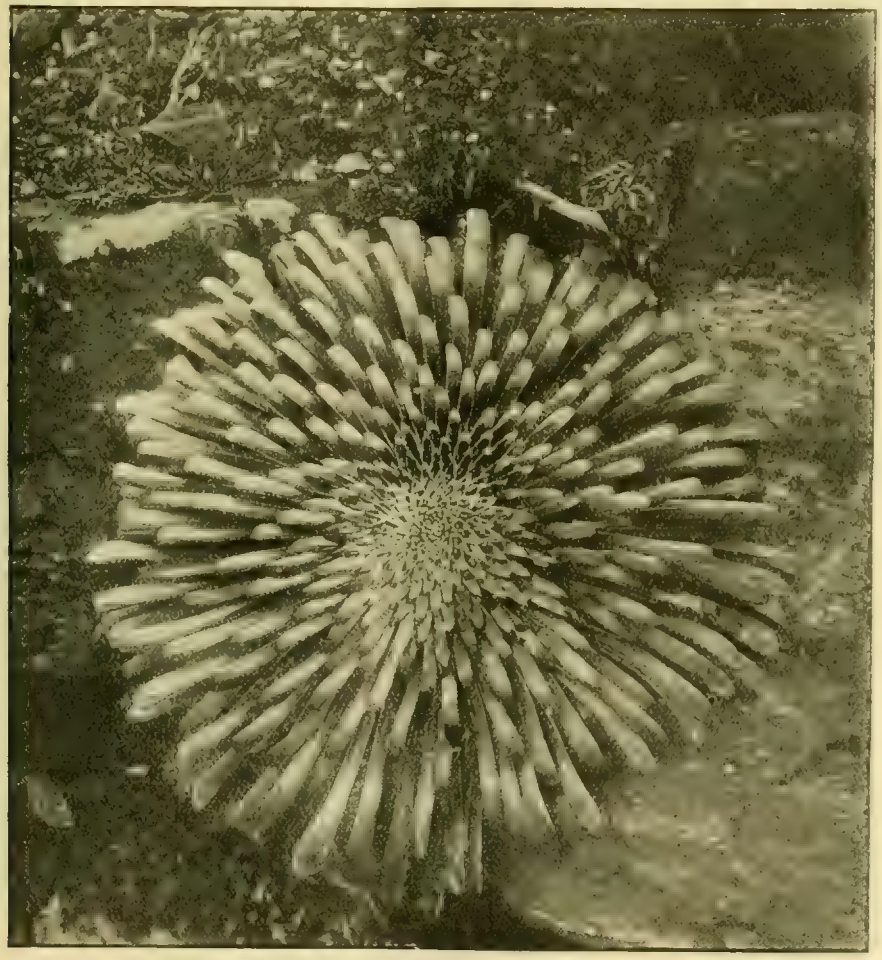
DENDROBIUM WARDIANUM.

THE notes on p. 99 lead me to offer one or two supplementary remarks on this beautiful Orchid. My memory takes me back to the famous collection of John Day, Esq., Tottenham, who cultivated the Assam form, and in several seasons produced flowers of intense beauty and vivid colouring. This plant was known at first as D. Falconeri obtusum, since it was considered a form of that pendent reedy-growing species. When, however, it flowered with Dr. Ward, of Southampton, it was at once recognised as distinct and much superior to D. Falconeri. In the famous collection of S. Mendel, Esq., Manley Hall, was a fine plant of this same form, and, on account of its rarity, it realised a goodly sum when the collection was disposed of by auction. When, however, the Burmese variety, with its stout pseudo-bulbs and thickened nodes, was discovered, vast quantities were imported, and were eagerly purchased by orchidists. And yet, how very few are the large specimen plants one meets with that have been grown, rested, and flowered, and increased in size, vigour and floriferousness for a number of years. It would almost appear as though large size in plants could not be attained, but that, after a few years, the native vigour was lost, and the strength of the plants continuously diminished.

The reference to treatment in the note already referred to implies that heat and moisture are absolutely necessary to the formation of growth and flowers. It is extremely difficult to say that the treatment given in one house would bring about similar results in another structure, and by a different grower. The practice adopted here for some few years is not quite the same as that in use at Tring Park. I mention this because the result so far has been considerably in advance of anything I have succeeded in obtaining under the heat and moisture treatment.

Our plants are grown in 5-inch pots, with just a bit of peat, sphagnum-moss and crocks jutting from the surface. They are mostly placed on a bed with an ash bottom when subjected to a little heat, and on an ordinary stage when in the greenhouse. We have many in bloom in the conservatory at the present time where the temperature falls sometimes at night time to 50°, and occasionally lower. As the plants pass out of flower they are placed in a warm house, and the growth (which has just started) is stout and vigorous. During the month of May the plants are stood in a greenhouse, where Fuchsias, Zonal Pelargoniums, etc., are grown, some vines in the same house giving shade. The young growths develop clean and strong, and the pseudo-bulbs are much stouter than when grown in heat. This greenhouse treatment is continued all through the summer and autumn, until growth has finished, and the last leaf is developed. Water is then withheld, and by November the buds begin to swell; but it is not until Christmas time that the plants are again put into heat. The result of this method has been eminently satisfactory, for we have them in flower at the present time with 16, 18, 19 and 21 open flowers on a single growth. The blooms are of great substance, and the colours are well developed.

I certainly advise those who have a number of plants to put them in the greenhouse or intermediate house during the summer and autumn; the growth will be more sturdy, will be better ripened, and the flowers will appear far more numerously. Of course constant syringing must be given in the greenhouse, and water must be afforded the roots, but an open soil as I have indicated seems to be the proper medium for the roots, and, since attention must be given to them every day, they will not become sour and soddened through excess of water. *W. Swan, Thorncote, Staines.* [Some excellent flowers produced by this method of treatment accompanied this communication.—ED.]



[*Photo by J. G*[illegible]

FIG. 59.—SAXIFRAGA LONGIFOLIA GROWING IN THE ROCKERY AT LEONARDSLEE.
(For text see page 148.)

CULTURAL MEMORANDA.

TECOMA SMITHII ×.

THIS beautiful, free-flowering greenhouse climber was introduced into this country from Australia. The flowers are produced on large panicles, and are of a bright orange colour, with chestnut-brown markings at the base of the lobes, forming a dark ring around the throat. Young growths about 3 inches in length taken off with a "heel" and inserted round the edge of 3-inch pots filled to their rims with light sandy soil, placed in heat, and watered, will soon form roots. Where only a few plants are desired, a simple and efficient method of rooting the cuttings is to plunge the 3-inch pot in another of a 6-inch size partly filled with sawdust or leaf-mould, and cover with a piece of glass, which should not be allowed to touch the cuttings. As soon as the latter become rooted the glass should be tilted for a day or two before finally removing it, in order to inure the young plants to the general atmospheric temperature of the house. They should be potted singly into small 60's, using fine, sandy mould for a potting medium.

BOUGAINVILLEA FORMOSA.

THE free growth, and, under comparatively cool treatment, abundant flowering qualities of this semi-scandent plant, combined with a profusion of the richly-coloured bright purplish-mauve bracts, render it a most desirable subject for the embellishment of warm greenhouses and conservatories. The plant is easily propagated from cuttings, about 3 inches in length, taken with a "heel"—that is, with a slice of the wood of the previous year's growth attached—and inserted round the edge of 60-size pots. Use sifted leaf-mould and sandy loam in about equal parts, and surface the whole with silver sand. Place the cuttings in a propagating pit, and water through a fine rose. When the tiny plants have made a little top growth they should be potted singly into small 60-size pots in the same compost as before, which should be made moderately firm. Place the plants in heat, and afford water as recommended above. *H. W. Ward, Rayleigh.*

SALVIA SPLENDENS.

WE have a nice batch of plants in flower now that have been grown from cuttings inserted on August 20. The cuttings were procured from plants growing outside; such soft cuttings make roots very readily if plunged in the propagating frame. When sufficiently rooted the young plants were potted off singly into 3-inch pots, and grown on in a cold frame. The compost used was loam and leaf-soil in equal parts, with the addition of a small quantity of well-rotted manure. When the roots began to take hold of the new soil the point of each shoot was pinched out. The final potting took place on September 25, when they were shifted into 5½-inch pots and returned again to a cold frame. At the end of the first week in October the plants were removed to a house having an atmospheric temperature of 55°, and the shoots were then stopped for the last time. They are now in full flower and are much appreciated. These Salvias are very effective when associated with Daffodils, Freesias, and Adiantum Ferns. We always grow a quantity of large plants which flower during November and December, but I find these later flowering plants more useful, although smaller in size. They are about 20 inches in height, and have ten or more flower-spikes upon each. *W. J. Snell, Wimpole Hall Gardens, Royston.*

EUPATORIUM PETIOLARE.

(See Figure in *Gardeners' Chronicle*, March 12th, 1904, p. 163.)

THIS showy winter-flowering plant, with its pretty, graceful, light, branching stems, is a welcome addition to our greenhouses, especially at this season of the year. It is curious that after a lapse of nearly thirty years this plant should leap into popularity once more. After the normal flowering period is passed, by reducing the shoots to about one-half their length, the new growths will produce a further supply of the fragrant blossoms well into April and May. After this further period of flowering, again cut back the shoots, and the new "breaks" will furnish a supply of cuttings. These should be placed eight or ten in a six-inch pot, in a compost of well-sifted loam, leaf-soil, and road-grit or silver sand. Place the pots containing the cuttings in a small hand-light in a house in which they can be given a little bottom heat. Here they will root readily, and, when rooted, let a little ventilation be given to the propagating light, increasing this in quantity day by day, until the cuttings are robust and strong, when the hand-light may be dispensed with. After the lights are removed, the plants should be placed on a shelf near to the glass, for the purpose of hardening them off. As soon as the cuttings are sufficiently rooted, pot them into good-sized pots (for they are gross feeders), using the same compost as before. The compost for their next shift would be composed of well-chopped turfy loam, leaf-soil, and decayed horse droppings, with a sprinkling of road-grit to keep the whole open. Pot the plants firmly. As soon as they have established themselves in their new pots, they should be hardened off to such a degree that they may be stood in the open. The roots must never be allowed to become very dry. The plants should be stopped at a height of 9 inches or 1 foot, and again when the new growths are half that length, in order to encourage a bushy habit. When well rooted, they can easily be transferred to their flowering pots, which should consist either of large 24's or large 32's, and some may require even larger sizes than these. Use a compost of soil similar to that used for their previous shift, but it should be coarser in texture, and contain a small quantity of soot. Keep the plants staked whilst growing, allowing plenty of room for their proper development, and, when well rooted, afford weak applications of liquid manure. Throughout the autumn, during the growing period, they will require plenty of water, for they must not be allowed to flag. On the appearance of frost, they should be housed in a temperature just above freezing point. Should green-fly make its appearance, fumigate the plants lightly, and at two or three separate intervals, rather than apply an overdose, as the foliage is very liable to injury from this process. They should be given plenty of light and air. Apparently there are two varieties of this plant, the one flowering in January, and the other in mid-February. The latter kind has larger inflorescences and flowers, and the habit is not so branched as the earlier flowering type. *Torium.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Pleiones.—Now that plants of P. humilis and P. Hookeriana have passed out of flower, and new growths have started, they should be repotted at once into a compost consisting of peat, loam, and chopped sphagnum-moss, with a sprinkling of silver sand, having first mixed these materials well together. Suspend the plants near to a roof ventilator in the cool house, and until the roots have obtained a firm hold on the compost, and the young growths are advancing satisfactorily, afford water but sparingly; afterwards the supply may be considerably increased.

Odontoglossum crispum.—Imported pieces that arrive at this season should at once be thoroughly cleared of all rubbish and decaying parts, and where time will allow, each piece may be placed into as small a pot as can conveniently be used, filling up around the base of the pseudo-bulbs entirely with small crocks. It is not advisable to put in several pieces together with the idea of making a large or specimen plant in the first season, because the plants will differ considerably when they flower, and scarcely can two be found that are alike. Where large quantities are obtained, a good plan is to lay some boards or slates upon the stage and cover these with a thin layer of rough sphagnum-moss, laying each plant separately upon the moss. The pseudo-bulbs will not need to be syringed or damped overhead, as the moisture arising from the usual damping down will be sufficient, and too much damping overhead is often the cause of decay occurring in the pseudo-bulbs. These freshly imported plants should be frequently examined, and as each piece commences to grow, let it be potted up. The pots used should be of small sizes, and they should be filled to quite three-parts of their depth with crocks, over which place a layer of sphagnum-moss. Keep the base of each plant on a level with the rim of the pot, and fill up to the rhizome with equal parts of peat and sphagnum-moss, cutting it up together rather roughly, and mixing with it a moderate quantity of broken crocks. After the potting process, the principal object of the grower should be to keep the plants cool and their immediate surroundings moist, so that they will not require heavy waterings until each plant is well rooted in the compost. The surface of the soil should be sprayed over very lightly whenever it appears dry, so as to induce the moss to grow. These cool-growing Odontoglossums do not appreciate fire heat; therefore, unless sharp frosts or very cold winds occur, they are better without it, and when heat has to be used let it be as little as will suffice. If during very cold nights the water pipes are made just lukewarm, and the house is covered as was advised in my last Calendar, a suitable atmospheric temperature of about 50° will be easily maintained. Shade the plants from all direct sunshine, and ventilate freely through the bottom ventilators whenever the outside atmosphere is above 45°. In mild, damp weather, with the thermometer in the screen above 50°, we open the top ventilators also. Without doubt, O. crispum is a lover of pure fresh air at all times, and it is essential to their healthy development. If all goes well with these imported pieces of Odontoglossum they will, by the autumn, have made new pseudo-bulbs, and be ready to start growing again, when they will require to be shifted into larger pots, where less drainage and more material to root into can be supplied.

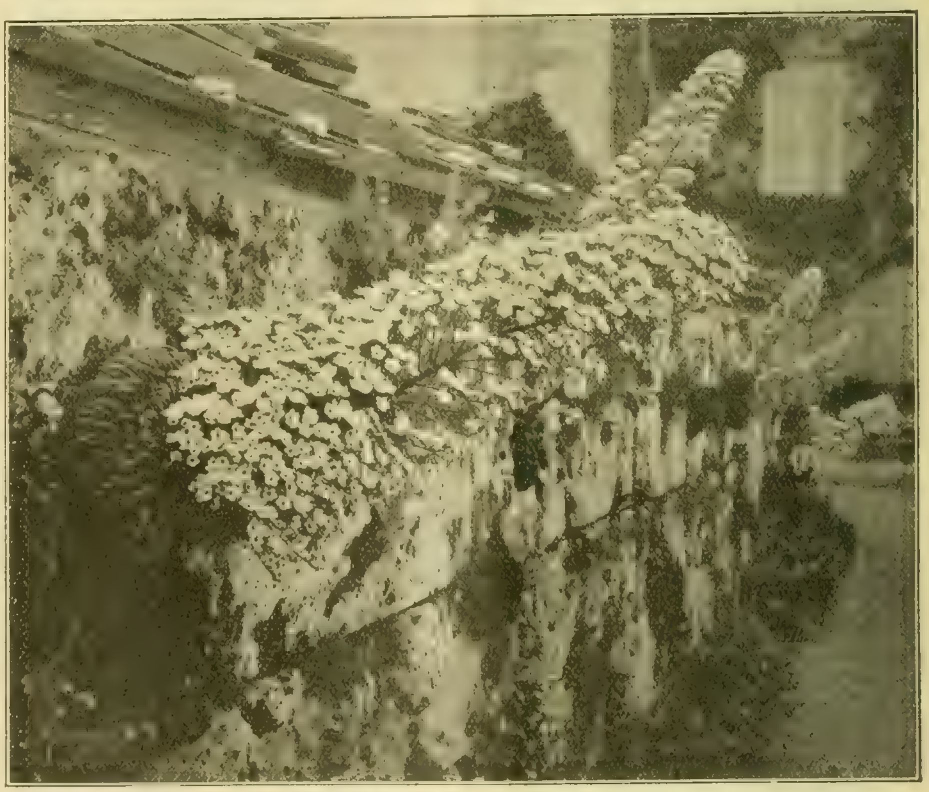


FIG. 60.—SAXIFRAGA LONGIFOLIA IN THE JARDIN ALPIN D'ACCLIMATATION, GENEVA.

(For text see page 148.)

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Caladiums.—The resting period being over, shake out the tubers from the old soil, and if they are intended for exhibition, select the strongest and place them in pots, 6 or 7 inches in diameter, from which they will need to be transferred to larger pots later on. The smaller-sized tubers may then be placed into 5-inch pots for use in furnishing. If Caladiums are subjected to the temperature of a greenhouse before using them for grouping in house decorations, they will serve very well. The compost I use when potting the plants consists of good turfy loam one-third, and the remainder of leaf-mould, turfy peat, and a liberal quantity of coarse sand, charcoal, and crock siftings. A small quantity of Standen's manure is used in the soil, and I find it helps to develop the rich colouring in the leaves and increase their size.

Alocasia Sanderiana and other varieties will now need to be re-potted. The provision of perfect drainage is a most important item, as these plants, when growing, require abundant root waterings. A humid atmosphere should be maintained for them, but avoid syringing the foliage, for should the water contain a small percentage of lime, it will leave a deposit, and thus destroy the effect of the beautiful metallic hues usually seen on these plants. In potting use a very porous compost, consisting of rough, fibrous peat, half-decayed oak leaves, dried cow manure, some ½-inch crocks and charcoal, and a fair proportion of living sphagnum-moss and coarse sand. If the compost is surfaced with sphagnum-moss, it will give a neat appearance to the plant.

Anthurium Scherzerianum.—Any plants that require re-potting should now be given attention. If any have become of too large a size to be conveniently used for decorative purposes, let these be at once separated and re-potted into pots 6 or 7 inches in diameter, as this size will be found most useful. The brilliant coloured spathes are always of much value in grouping, whether in the stove, intermediate, or dwelling house. If a few spathes be cut with long stems, and associated with Arum Lilies, they will have a charming effect when arranged in large vases. The lasting qualities of the spathes when cut are sufficient reason for increasing the stock of this useful stove plant. Success will be attained if the plants be grown in a mixture of good fibrous loam, from which the finer particles have been excluded, peat, dried cow-manure, coarse sand, and charcoal, with sphagnum-moss added. Perfect drainage is essential, and liberal supplies of liquid manure and soot should be afforded the plants when the spathes are advancing.

General Remarks.—Careful ventilation is of the highest importance; the underground or wall ventilators should be used at the present time in preference to those in the roof. Maintain a humid atmosphere to encourage free growth in all newly-potted plants. Hippeastrums (Amaryllis) that have passed out of flower should now be encouraged to make good leaves and a strong bulb for flowering next season. Syringe the plants freely, and keep them close to the glass, bearing in mind that a bulb is the store-house for the flower. Take every opportunity to prevent insect pests by employing light fumigations; don't wait for their appearance.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Melons.—Plants that were raised early in January and grown on the cordon system should be stopped when about halfway up the trellis, which will hasten the formation of side shoots and encourage the plants to come into flower more quickly. By allowing three blooms to open on each plant before pollenising them, an even "set" will be secured, and the fruits will be likely to swell simultaneously. Ripe fruits can be had in 15 weeks from the time of sowing at this time of year. Seeds should again be sown for succession, if house accommodation can be provided. Close the houses early in the afternoons and maintain the atmosphere in a moist condition.

The Orchard House.—If the trees were given attention in the autumn as regards repotting and top-dressing they will be in a satisfactory condition for fruiting, and may now be transferred from the plunging material where they will have been all winter, to the cool house, where they will soon commence to expand the blossoms. Afford each tree plenty of space for the fruit and foliage to obtain sunlight. Artificial heat is not necessary, especially during the early stages of growth. If the atmospheric temperature of the house can be kept below 50° at night so much the better. The houses must be freely ventilated at all times when external conditions are favourable, and more particularly when the trees are in flower. When the trees are in flower it will be necessary to distribute the pollen each day by giving the trees a gentle shake. The trees do not require much water at the present time.

Pot Vines that were started in November are fast swelling their fruits and will now require liquid manure, well diluted, for if applied too strong it would turn the feeding roots black and ruin the crop. To alternate with the liquid manure use Peruvian guano by sprinkling a little on the top of the soil and watering it in with tepid water. Continue to maintain a bottom heat of 70° and keep all sub-laterals pinched as they appear.

Successional Vines.—Black Hamburghs will now demand close attention in regard to disbudding, stopping, and tying, for if a quantity of surplus growths are cut out all at once it must interfere with the root action. Ventilation is important and should be applied gradually as the atmosphere of the house becomes warmer, avoiding cold draughts always.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Half-hardy Annuals.—Phlox Drummondii is one of our most useful and effective half-hardy annuals, and because of its varied and brilliant colours is indispensable in the flower garden. The dwarf compact varieties are invaluable for planting beneath Roses, or as surface plants under other tall growing species, while the grandiflora sections can be used in masses by themselves, or as appropriate subjects for the mixed flower border. Seeds of varieties, in distinct colours, should be sown at the present time in shallow boxes in light, sifted soil pressed firm, and placed in a warm, moist atmosphere. As soon as the seedlings are large enough, they should be pricked out into larger boxes filled with rich soil, allowing sufficient space between the plants to save the necessity of further pricking off. If afforded a temperature of 55° to 60°, the seedlings will soon be fit for removing to cool frames to harden off.

Salpiglossis.—The sowing of seed now in boxes is a better method of culture for this beautiful plant than that of sowing later out of doors, as advocated by many growers. If sown now, the seedlings will flower in the warm dry weather of summer and early autumn, and are then seen to the best advantage. When sown later, the bloom is usually destroyed by rain and bad weather, and the plant also, under these conditions, gives off an objectionable odour. The best plan is to sow very thinly in boxes in light, sandy soil, and allow the seed to germinate in moderately brisk heat; but when the seedlings are through the soil, plenty of fresh air must be admitted, as the Salpiglossis is very liable to damp off. When strong enough, prick them off into boxes, placing them in gentle warmth to induce them to root readily, and when established harden off preparatory to planting them out at the end of April. If massed in their different shades, the display is goregous, so rich are the colours and markings of this beautiful flower.

Nicotiana Sanderæ, notwithstanding adverse criticisms, is undoubtedly—when well cultivated—a valuable acquisition to our gardens. Its rose-coloured flowers, conjointly with the bold appearance of the plant, makes it a most desirable ornament for the border, while a bed devoted solely to it is extremely attractive. If the hybrids in distinct colours, the seed of which is sent out this spring for the first time, grow as luxuriantly, and flower as profusely, they will prove invaluable. Sow the seeds of all the Nicotianas now in heat. When large enough, prick off the seedlings into large boxes, and again when necessary pot the seedlings into 5 or 6-inch pots.

The Japanese Pinks (Dianthus Heddewigii either mixed or in colours are splendid in beds by themselves, or in conjunction with other flowering plants. Although the species is often used as a bi-annual, it is easier grown and more useful treated as a half-hardy annual. Sown now in heat, plants can be had fit for planting out in May, and will be in flower by end of June.

The Corsican Daisy (Erigeron mucronatus), with its pretty white flowers shaded with rose colour, is a beautiful, dwarf plant suited for the hardy flower border, or the rock garden, as it remains in flower for a long time during the summer months. It is perennial, but if sown now in heat will flower early in summer.

Marguerite Carnations, and the new quick-flowering varieties of this plant, should, if not already done, be sown at once for flowering in the autumn. If sown now in shallow boxes and placed in heat, the seedlings will be soon ready for potting into small thumb pots. When rooted sufficiently they should be again moved into slightly larger pots, using a prepared compost of rich, gritty soil. They will then make sturdy and strong plants fit for planting out, or for using in vases, by the end of the month of May.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Figs.—Fig trees will grow in nearly any soil, but in well-manured ground they grow too rapidly and fruit but little. They require to have the roots somewhat confined; in instances where they are not already restricted they should be made so. If the trees are planted against a wall and the soil appears to be too rich, make a border about 6 feet in width, and build a concrete wall, or one of rough bricks, below the ground level to confine the roots to the border. Fig trees growing in sandy soil are not excessively vigorous, and may be fed with liquid manure when the fruits are swelling. The trees need a hard bottom for the roots, and I know of several cases where good crops are obtained annually from very old trees whose roots have apparently nothing but a hard road to grow in. These trees make the necessary amount of wood, but there is not much pruning needed beyond thinning out the shoots. As a general rule, however, trees planted against walls require more pruning than they get. All the gross wood should be thinned out, retaining the well ripened, short jointed shoots. These latter should be laid in straight, leaving ample room to lay in other shoots during the growing season. In many cases the shoots will require pruning; especially should this be done when one or more shoots are more vigorous than others, for it is these long sappy shoots that fail to ripen well, and are therefore unproductive. The bearing shoots should be laid in their whole length. Others may be pruned back to one or two eyes, and if both "break" and are not required, rub off the one less favourably placed. Aim at getting a supply of fruiting wood in the middle of the tree. In regard to protecting the trees, I may say that I have not found much benefit to follow the practice of covering them, though I have experimented with trees on the same walls. If you cover up sufficiently to protect the trees from severe frost, growth will commence whilst they are so covered, and the last state will be worse than the first. I have given up protection except in rare instances, such as when a sharp frost is foreseen in May; those on a south wall may then be covered. Growers in various districts, however, must be guided by circumstances. Brown Turkey is the most reliable variety, and when grown well the fruits attain to a large size and are delicious.

Black Currant Mite (*Phytoptus ribis*).—Examine the plantations of Black Currant bushes, and if any more big buds are noticed have them at once picked off and burnt—a couple of men or boys will destroy a lot in a short time. I discovered a few on the bushes here and had them picked off and the ground well dressed with lime. Several trees that were badly infested were rooted up, and up to the present no other swollen buds have been seen. The trees will be all the better if sprayed again with Richards' XL-All Winter Wash.

Fruit Room.—Throw out all decaying fruits. Apples are keeping well, especially the varieties Blenheim Pippin, Cockle Pippin, Barnack Beauty, Beafin, and Dumelow's Seedling.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Brassica Seeds.—Seeds of many varieties of Cabbage and similar plants may now be sown extensively out of doors. Select an open piece of ground, and fork it over on a dry day, in order to get it into first-rate tilth. If the ground is of a heavy nature sow the seeds in lines, and cover them with finely sifted soil. But if the soil is more suitable, mark out a bed 4 feet wide and scatter the seeds broadcast, but thinly. If birds are troublesome it is best to afford protection by netting the whole bed over straightaway, otherwise much damage may be done before it is noticed. Cauliflowers, in various varieties, Brussels Sprouts, Savoys, Kales, Kohl Rabi, Cabbages, both white and red, Broccoli, &c., should be sown, together with any other kinds that there is a demand for. Make another sowing three weeks later for succession. It is of the utmost importance to sown thinly and not allow the plants ever to become overcrowded. Avoid sowing on the same ground as was used for this purpose last year.

Slugs.—These are troublesome during mild weather in the spring, and often the plants from a whole seed bed may be cleared in a very short time. Where this is feared let some slacked lime be forked into the soil when preparing the seed bed. It is well to repeat the application of lime when the seedlings appear, but the operation then should take place after dark when the slugs, being already on the surface in search of food, will immediately come into contact with the lime. It is next to useless to sow lime on the surface through the day with a view to killing the slugs, as they are then in their shelters, and will wait there until the strength of the lime becomes exhausted. Make a determined effort early in the season to lessen their numbers.

Tomatos.—Sow seeds for raising plants to fruit out of doors. I do not recommend sowing earlier than this date, as such early plants usually become "leggy" and starved before danger from frost is past. Select an early variety, preferring one that produces smooth-skinned fruits. A good selection of Ham Green is suitable. In very late districts it may not be worth while attempting to grow Tomatos in the open unless for the purpose of making ketchup of the green fruits, for which they are quite suitable. Sow the seeds in heat, and pot the young plants on in the usual way, finally hardening them off in frames in readiness to plant out by the end of May or early in June.

Carrots.—The main crop of these may be sown as soon as the state of the soil will permit. A deep, light soil is best, but good crops can be secured from most soils if the cultivation is modified to suit the particular circumstances. It will be quite useless to expect fine root crops of any kind on very heavy or stony land unless it be thoroughly loosened to its greatest depth by trenching, afterwards making holes and filling these with finely sifted soil in which to sow the seed. I have seen heavy crops of roots of the finest description obtained from such soils after this treatment. On more suitable soils the seeds should be sown in lines drawn at 12 inches apart. Before filling in the lines a sowing of wood ashes or soot should be made. New Red Intermediate is a standard selection of that type, but a stump-rooted variety should also be sown as part of the main crop. Early Nantes and Early Gem should be sown at intervals of a fortnight throughout the season to provide the kitchen with young tender roots regularly. In order to have them in the best condition, these should be pulled when they have only just attained their full size.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Mar. 10	Dutch Gard. Soc. meet.
MONDAY,	Mar. 12	Ann. meet. Unit. Hort. Ben. & Prov. Soc., 8 p.m., at the Roy. Hort. Hall, Westminster.
THURSDAY,	Mar. 15	Linnean Soc. meet.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick—42·2°.

Actual Temperatures:—

London.—*Wednesday, March* 7 (6 P.M.): Max. 66; Min. 48°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 8 (10 A.M.): Bar., 30; Temp., 51°; *Weather*—Drizzly rain.

Provinces.—*Wednesday, March* 7 (6 P.M.): Max. 57° England S.E.; Min. 47° Liverpool.

SALES.

MONDAY—

Herbaceous plants, Roses, Begonias, &c., at Protheroe & Morris' Rooms, at 12.

WEDNESDAY—

Japanese Lilies, Carnations, Begonias, 3,000 Roses, Ornamental and Decorative plants, at Protheroe & Morris' Rooms, at 12.

Nursery Stock at Elvaston Nurseries, Borrowash, near Derby, by order of Messrs. W. Barron & Son, by Protheroe & Morris, at 12.

FRIDAY—

Gloxinias, Greenhouse plants, Ferns, &c., at Protheroe & Morris' Rooms, at 12.

Imported and Eestablished Orchids at Protheroe & Morris' Rooms, at 12.30.

Events of the Week.

The precociously fine weather on Tuesday last ensured a remarkably pretty and interesting display in the New Hall of the Royal Horticultural Society. With the customary propensity to grumbling, said to be a British characteristic, though we think we have observed it elsewhere, people were found complaining of the heat and of the overpowering fragrance of the Hyacinths and other spring flowers. For the details of the show we must refer to another column, wherein it will be seen that ample compensation in the way of beauty and interest was afforded for the trifling inconvenience complained of. The three o'clock lecture was on the well-worn subject of the nomenclature of garden plants, but we do not gather that any further light was thrown on the subject or any practicable proposal suggested for remedying the errors and anomalies which have the all-potent sanction of custom. Certain plants will, in gardens, be called Lilies or Laurels in future, as they have been in the past, although, for the most part, the names are absolutely inaccurate, and, like the popular "geraniums," are "terminological inexactitudes."

The great event of the day, however, was the complimentary dinner to Mr. William Marshall at the Hotel Windsor, and which was not in the official programme. It was not the less important on that account. The committees had fairly earned their dinner, and they enjoyed it the more because it was made the means of paying a thoroughly merited compliment on their part to Mr. William Marshall, who has acted as Chairman to the Floral Committee for twenty years. During that period he has won the esteem of his colleagues for his disinterested impartiality, his wide knowledge, his geniality, and his firmness where occasion demands. Mr. Harry Veitch, who occupied the chair at the dinner, had an easy task before him, for his experience of the Royal Horticultural Society and of the work which Mr. Marshall has accomplished for horticulture generally is necessarily intimate. Several of the speakers indulged in reminiscences of the "then and now" order. Mr. Marshall himself was proud to recall the fact that he was a disciple of Wilson Saunders, a scientific horticulturist venerated in his day but known only by name to the present generation. No less justly proud was he to remind his auditory that he it was who had the satisfaction of being the first to flower Odontoglossum Alexandræ, or, as it is now called, O. crispum.

The Committee had also availed themselves of the opportunity of presenting Mr. Marshall with his portrait, which was exhibited in the course of the day in the Floral Committee Room at the Hall, and was generally approved.

Amongst other news of the week we may mention that the Veitch Memorial Trustees have awarded medals to Baron Sir Henry Schroeder in grateful recognition of his invaluable services in the erection of the Horticultural Hall, and to Sir Thomas Hanbury for his munificence in bestowing on the Society the beautiful garden at Wisley, which is destined to more than replace the time-honoured establishment at Chiswick.

Another medal was unanimously awarded to Mr. E. H. Wilson in commemoration of his remarkable services to horticulture and botany whilst in the service of Messrs. James Veitch and Sons. The details of Mr. Wilson's journeyings in China are in course of publication in these columns, as well as descriptions of numerous plants introduced by him. The grand Meconopsis integrifolia and the remarkable series of Primulas are by no means the only results of the adventurous journeyings of Mr. Wilson and of his intelligent zeal as a collector. The Trustees have also made a most acceptable grant of £25 in aid of the funds of the Lindley Library.

Our Supplementary Illustration represents an example of the Wych Elm growing on a site at about 100 yards distance from the River Dart at Sharpham House, in Devon, the residence of Miss Durant. It will be seen on reference to the picture that the tree possesses a remarkable spread of branches, and when we state that these cover an area of over ¼-acre, some idea of the extraordinary size of the tree may be gained. The height, although not exceptional, is 80 feet, but the longest branch measures the great length of 104 feet. The girth, at a distance of 6 feet from the ground, is 18 feet, and thereabouts spring four of the largest branches. These branches and the other smaller ones are covered by dense patches of ferns on their upper surfaces. The tree was planted over 200 years ago, and is still in good vigour. For the opportunity of illustrating this remarkable tree we are indebted to our correspondent Mr. John Maeers, The Gardens, Sharpham, near Totnes.

Small Holdings.—The Departmental Committee appointed by the President of the Board of Agriculture and Fisheries to enquire into the subject of Small Holdings, held a sitting on the 28th ult. Evidence was given by Mr. W. Mackenzie, Secretary of the Crofters Commission, and Mr. Isaac Connell, Secretary of the Scottish Chamber of Agriculture.

Horticultural Exhibitions at Birmingham.—At a meeting held in the Botanic Gardens, Edgbaston, Birmingham, on the 1st inst., Neville Chamberlain, Esq., in the chair, the following Resolution proposed by Mr. John Pope, King's Norton, and seconded by Mr. T. G. Baker, Wolverhampton, was carried unanimously: "That this meeting of practical horticulturists cordially approves of the proposal of the Birmingham Botanical and Horticultural Society to hold Flower Shows in the months of June and July, and pledges itself to further the scheme in every respect." Subsequently a committee was formed to make the necessary arrangements, and June 13 and July 4 were selected as the most suitable dates for the shows.

Linnean Society.—The next evening meeting will be held on Thursday, March 15, 1906, at 8 p.m., when there will be a discussion on the "Origin of Gymnosperms," to be opened by Prof. F. W. Oliver, F.R.S., F.L.S. &c.

The Botanical Magazine.—The plants figured by Miss Smith and described in the March number are the following:—

Arachnanthe annamensis, *Rolfe*, in *Gardeners' Chronicle* (1905), i., p. 391; tab. 8,062.—Introduced to the nurseries of Messrs. Sander & Sons from Annam and flowered at Glasnevin in June, 1905. The five segments of each flower measure nearly 3 inches in length, are narrow with recurved edges, and all except the dorsal sepal, which is erect, are curved downwards. The colour is yellow thickly barred with red. The lip is much shorter, mobile, and three-lobed, and of complex structure, details of which are given in the text by Mr. Rolfe.

Erica terminalis, *Salisbury*; tab. 8,063.—This is the E. stricta of Donn, and has various other synonyms. It has small linear leaves in groups of four, and flowers in heads towards the ends of the branches. Each flower is about a quarter of an inch long, deflexed, urn-shaped, of rosy pink colour. It is a native of Corsica and Southern Italy, and has been in cultivation at Kew as a hardy species for many years. It is now described by Mr. Skan.

Lonicera tragophylla, *Hemsley*; tab. 8,064.—Discovered by Dr. Henry, introduced from Hupeh, China, to Messrs. Veitch's nurseries by Wilson, and described and figured in these columns 1904, ii., p. 151.

Polygala apopetala, *T. S. Brandegee*; tab. 8,065.—A very remarkable species, acquiring the dimensions of a small tree, with shortly-stalked lanceolate leaves and flowers that might well be taken as pea-shaped. They are of a rosy lilac colour and arranged in long racemes at the ends of the branches. It was first found in Lower California by Mr. Brandegee. The specimen figured came from the garden of Sir Thomas Hanbury at La Mortola, Ventimiglia, and is described by Mr. T. A. Sprague.

Ceropegia fusca, *C. Bolle*; tab. 8,066.—The stems and branches of this curious Asclepiad are ascending (not climbing), succulent, and cylindrical, with narrow, lanceolate leaves. The flowers are in clusters from the sides of the branches, each rather more than an inch long, ascending, dull reddish-brown in colour, the tube cylindric, slightly dilated at the base, the limb dividing into five ovate acuminate segments whose long tips are incurved and united at their extremities. It is a native of Grand Canary, and was introduced to Kew by the agency of Mr. Ledger. A detailed description is furnished by Mr. N. E. Brown.

Royal Horticultural Society.—Intending candidates for the Society's annual examination in the principles and practice of horticulture to be held on March 28 are requested to send in as soon as possible their entry forms, with the name of their proposed supervisor, to the secretary, from whom the syllabus, with entry form attached, may be obtained. Entries cannot be accepted after March 19. If any candidate desires to sit in London for this examination, he must say so on his entry form, and the Society will then make arrangements for him to attend at their hall in Vincent Square, Westminster. A scholarship of £25 a year for two years is offered by the Worshipful Company of Gardeners. The Society will hold an examination for school teachers in Cottage and Allotment Gardening on Wednesday, April 11. This examination is intended for, and will be confined to, elementary and technical school teachers. Teachers and assistants desiring to sit for the examination should apply at once for a copy of the syllabus to the secretary, R.H.S., Vincent Square, Westminster, S.W.

Worthy of Imitation.—Very recently Mr. and Mrs. F. C. Stoop, of West Hall, Byfleet, Surrey, kindly intimated to their garden and estate staff, through Mr. G. Carpenter, the head gardener, their intention to grant to all their employees a Saturday half-holiday. This kind consideration took effect on March 3 at 1 p.m. The employees have since made a presentation to Mr. and Mrs. Stoop as an expression of their thanks.

Flowers in Season.—From Messrs. C. Brooks & Co., The Firs, Worting, Basingstoke, we have received a number of "pips" of "Stellate," or star Primulas. White, pink, blue, crimson, salmon and other colours are included, and, judging by the flowers sent, the strain appears to be a desirable one. Messrs. Ed. Webb & Sons, Stourbridge, Staffs, send us a box containing samples of their strain of Cinerarias. The deep sheen of the "blues," "maroons," "crimsons" and other colours remind one of rich velvet. The size of petals, substance and form are alike good in those sent, but we can have no manner of judging the habit, floriferousness of the plants, &c., from single "pips" only.

Mendelism.—When adverting recently to the literature of this subject we omitted to mention a short treatise by Mr. R. C. Punnett, published by Messrs. Macmillan & Co. We can now commend it to the notice of those of our readers who desire to familiarise themselves with a somewhat intricate subject. "Eating peas" would have been better designated as edible peas, whilst "the albumen of the cotyledons" is a still more unfortunate expression, as it tends to create in the minds of botanists an impression of the value of the book which would be essentially unmerited. It is in reality an excellent introduction to the study of heredity.

Windsor Chrysanthemum Society.—The King has presented the Windsor Chrysanthemum Society, of which His Majesty is patron, with a silver challenge cup of the value of 10 guineas, for competition by growers in the society's district.

Climbing Plants.—Mr. John Murray has published a popular edition of Charles Darwin's work on "The Movements and Habits of Climbing Plants." The book when it first appeared in 1865 was a veritable revelation to all but professed botanists, and even furnished them with many additional illustrations and much valuable suggestion. To students and those desirous of prosecuting still further research into this fascinating subject the present edition will be invaluable.

Forcing Cherries and Strawberries by means of Ether.—According to M. Bultel, in the *Revue Horticole*, the flowering of Cherries may be advanced by a period of three weeks by means of etherisation, whilst the ripening of the fruit is advanced by 15 days. Strawberries properly treated also produce their fruits much earlier, but flower more regularly and abundantly. When is that experiment station at Wisley to be set in action to test such statements as these?

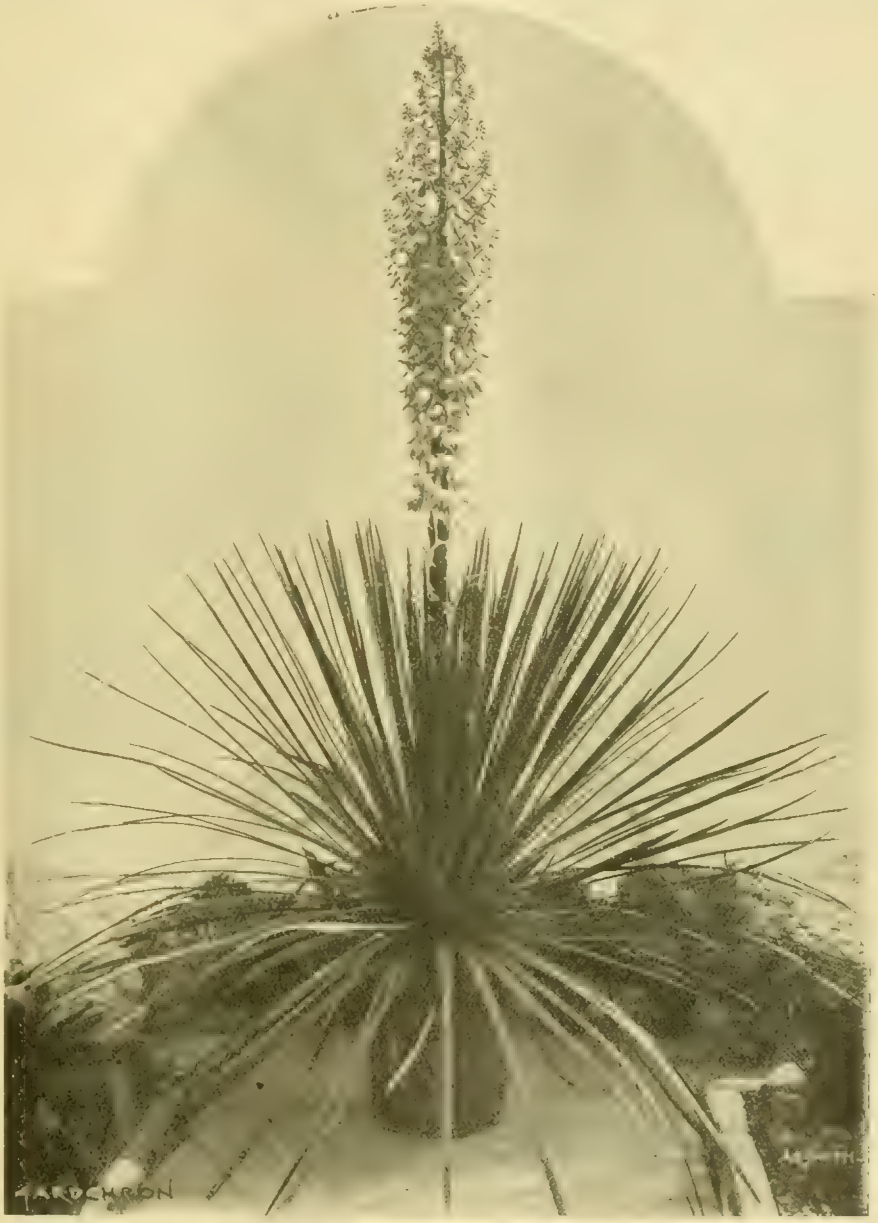


Fig. 61.—YUCCA NITIDA NOW FLOWERING AT KEW.

Scape 7 feet in height; flowers greenish yellow (see text on page 154).

Royal Botanic Society.—We are informed that Her Royal Highness Princess Alexander of Teck has consented to open the Horticultural Exhibition, to take place in the gardens of this Society at Regent's Park on Wednesday, June 13.

The Surveyors' Institution.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, March 12, at 8 p.m., when a paper, entitled "The Means of Locomotion and Transport in London," will be read by Mr. William Woodward (Fellow). The next Junior meeting will be held on Monday, March 19, at 7 p.m., when Mr. R. G. G. Reed will read a Paper, entitled "The Surveyor and Fire Insurance." All inquiries with reference to the Junior meetings should be addressed to Mr. Sydney A. Smith, 22, Chancery Lane, W.C. Percival Currey, Hon. Secretary; Alexander Goddard, Secretary.

Publications Received.—*Annual Report on the Taj and other Government Gardens at Agra*, 1904-5: By A. E. P. Griessen, Esq., Superintendent. The most notable and satisfactory feature of the year's administration has been the large increase in receipts from sales of the produce of the Gardens and Nurseries.—*The Queensland Agricultural Journal*; January. Contains the usual articles on crops and stock. Certain beautiful and useful native weeds are recommended to the notice of Queensland readers.—*Agricultural Bulletin of the Straits and Federated Malay States*; November. Edited by H. N. Ridley. Contents: Bark fungus on Para Rubber, by the Editor; Experimental Tapping, &c.—*Jamaica Bulletin of the Department of Agriculture*; January. Edited by William Fawcett, B.Sc. Contents: Notes on Economic Plants, Yams, Imported and Native Corn, &c.—*Agricultural Journal of the Cape of Good Hope*; February. Leading features: Poisoning of Horses by Ornithogalum thyrsoides, Extra-tropical Forestry (continued) by D. E. Hutchins, &c.—*Thirty-first Annual Report of the Ontario Agricultural College and Experimental Farm*, 1905. The year has been one of steady progress, experiments out of doors and investigations in the laboratories having been largely and successfully carried on.—*Thirty-sixth Annual Report of the Entomological Society of Ontario*, 1905. (Published by the Ontario Department of Agriculture). Contains many useful, illustrated papers on injurious and other insects, and details many experiments made in various districts.—*Working Plan, 1905-1919, of the Castle Hill Woodlands, North Devon.* By W. R. Fisher, M. A. A report on the Castle Hill Estate, the property of the Right Hon. Earl Fortescue, mentioning its present condition and its proposed future.—"*Haven.*" A horticultural paper published at Aarhuz (Denmark) and including an account and illustration of the Vilmorin Memorial.—*The Kew Bulletin.* Appendix iv., 1905, of the *Kew Bulletin of Miscellaneous Information*, contains a list of the members of the staffs of the several Botanical Departments at home and in India and the Colonies. We need hardly comment upon the value of this pamphlet for purposes of reference.—*Illustrations of Chrysanthemums.* Messrs. W. Wells & Co., Merstham, Surrey, send us a sheet containing illustrations of new Chrysanthemums. The pictures are two-thirds natural size, and represent some good novelties for 1906.

NEW AND NOTEWORTHY PLANTS.

YUCCA NITIDA (Wright, M.S.).

THIS is a new species of Yucca in the way of Y. Whipplei, from which it differs mainly in having longer, wider, and more rigid leaves, the flower spike and flowers being identical with those of Y. Whipplei as represented in the *Botanical Magazine*, t. 7,662, see also fig. 62. It is possible that the last-named species as known to American botanists includes forms as varied in leaf characters as these two. Dr. Trelease, in his monograph of the Yuccas published in the Thirteenth Annual Report of the Missouri Botanical Garden (1902), says:—"Y. Whipplei is the name proposed by Dr. Torrey, and still commonly employed, for a plant which, when in bloom, forms one of the most striking and beautiful features of the coast-range vegetation of Southern California. From all other Yuccas it differs in the slender style rising abruptly from the top of the ovary and capitately enlarged into a papillate stigma, and in possessing somewhat glutinous pollen, as well as in certain capsular characters which led Dr. Engelmann to give it the sectional name Hesperoyucca, which both Dr. Baker and the writer have proposed to employ as a generic name. Though the mountain and valley forms vary greatly in amplitude of panicle, &c., only one species of Hesperoyucca appears capable of characterisation, and this has long been in cultivation in European gardens, partly under the name of Yucca Whipplei and partly under the name of Y. californica, which has further been applied to very diverse things."

There can be no doubt that the plant at Kew is either one of those diverse forms of Y. Whipplei or a new species allied to it. At the same time it is certainly not the plant known in European gar-

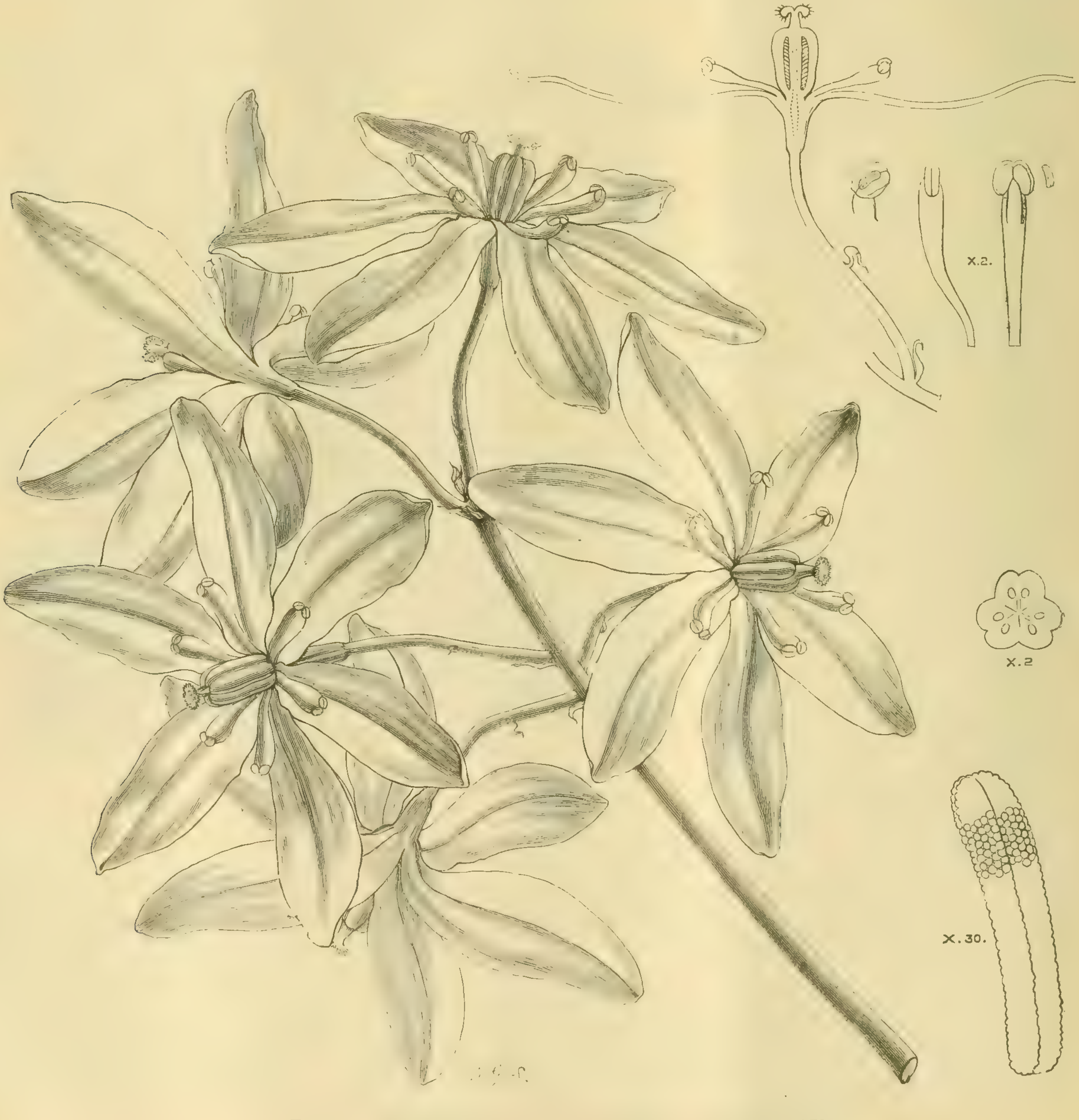


FIG. 62.—INFLORESCENCE AND FLORAL DETAILS OF YUCCA WHIPPLEI.

dens as Y. Whipplei, of which there is a figure and description by Mr. Baker in the *Gardeners' Chronicle*, August 1876, p. 196, from a plant flowered in the collection of the late Mr. Peacock, of Hammersmith. (See fig. 62.) This has linear leaves 18 to 20 inches long, the lower ones measuring half an inch wide at the base, glaucous green and triquitrous at the back; whereas the plant at Kew has rigid ensiform leaves 3 feet long, slightly sinuous, flat, save a slight keel below, 2 inches wide at the clasping base, narrowing gradually to an acute horny brown tip, the margin barely rough to the touch. The scape is 7 feet in height, the upper half clothed with flowers and branches forming a compact pyramidal head a foot in diameter at the base. The flowers are fragrant, 3 inches across, pale greenish-yellow, appearing white a short distance off, with a bright purple tip to each of the segments. Stamens and ovary pure white, the latter crowned with a bright crystalline green stigma. This is one of the most beautiful Yuccas, and from its behaviour under cultivation at Kew it is much more easy to manage than Y. Whipplei, of which I have never seen a healthy example at Kew, although I have seen fine plants of it in gardens on the Riviera. Y. nitida was purchased from Messrs. F. Sander & Sons two years ago. *W. W.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Salad Potatos.—Perhaps in the future our countrymen will take more kindly to the humble Potato as an ingredient in mixed salads, or alone as do the French and Germans. The Potato as a salad goes well with boiled Beetroot, Celeriac, and raw Onions, if oil, vinegar, coarse pepper, and salt be added according to taste. The varieties white and purple Fir Cone were at one time occasionally grown in this country, but more as curiosities than for consumption, and now are but rarely found in gardens, and for any other use than in salads they can scarcely be recommended. The tubers will attain to a length of 6 inches with a lateral diameter of 1½ inches; and the texture of the flesh being waxy, they may be sliced like a Cucumber, the shape of the slices being retained, even when vigorously stirred about with the other ingredients in the salad bowl. *F. M.*

Rhododendrons.—Rhododendron barbatum is one of the most beautiful subjects now in flower in the open in these gardens. Blood-red in colour, the inflorescences are of striking and handsome appearance, especially when the sun shines on the flowers. During severe frost, a little tiffany is arranged over the top of the plant and supported by poles. This method of erection answers well. They are planted in a mixture of peat, leaf soil, and the natural loam, which is clayey, and this mixture suits them. A mulching of manure is placed over the roots in summer. R. caucasicum Nobleanum has been in flower for the past two months, the fine red colour of the flowers and the general features of the plants making the American Garden a source of pleasure. It is planted in the same compost as R. barbatum. R. præcox, a hybrid between R. ciliatum and R. dauricum, is quite hardy, and has been flowering for some weeks past in sheltered spots in these gardens. It makes a charming bush about 3 to 4 feet in height and flowers with great freedom. The two parents were recently in flower here. R. ciliatum does well when gently forced in heat, and the flowers are white. It is a suitable plant for both the conservatory and the drawing-room. R. argenteum grande is finely in flower in the Rhododendron house at South Lodge, the residence of F. D. Godman, Esq. The plant measures 14 feet by 14 feet. The trusses of bloom are magnificent in appearance (see double-page supplementary illustration in our issue for June 10, 1882). This variety is not hardy, excepting, I believe, in a few very sheltered spots in Cornwall. At night time by artificial light the spots on the petals shine like small nuggets of gold. The foliage is particularly handsome, more especially the under side of the leaves, which is covered with a silvery down. R. Fosterianum is now a grand feature in the conservatory. It should be grown outside all through the summer months and housed during the winter months until slightly forced in heat. The beautiful white flowers are deliciously fragrant, and each possesses a pretty fimbriated edging. In point of beauty it is far superior to Lady Alice Fitzwilliam, which, with its variety fragrantissimum, is now opening its flower buds. The flowers are white, and are sweet scented. By slight forcing a succession of trusses can be obtained for a long period. *W. A. Cook, Leonardslee Gardens, Horsham.* [An excellent truss of R. argenteum grande and another of R. barbatum accompanied these notes. —Ed.]

Montbretias.—Referring to the remarks by Mr. G. Buckley on p. 124, I think the better plan is that generally adopted, namely, that of lifting and dividing them as soon after the flowering season in the autumn as possible. There is then less fear of damaging the young growths which spring from the base of the old bulbs than if left till spring. The young growths are extremely brittle. *G. F. Hallett, Easton Neston Gardens, Towcester.*

Potatos at Inveresk.—Inveresk is six or seven miles east of Edinburgh, and within a few hundred yards of the railway station are the stores of Messrs. Scarlett. Visiting them the other day I saw 14,000 boxes of seed Potatos. There were 50 tons of Southern Queen in boxes, also 10 tons of Dalmeny Radium, 10 tons of Diamond, and 15 tons of Midlothian Early, the new first early. In the centre of the building a squad of men and women were dressing a 100 ton lot of Warrior. Many early sorts were cleared out entirely. Three hundred tons of Epicure or British Premier had been sold, and 200 tons of Sir John Llewelyn. I saw 10 tons of the latter, which were kept for planting. They were all large tubers, and Mr. Scarlett said they would be planted whole. The more valuable varieties are boxed in the field at raising time and taken direct to the store. Planting will begin as soon as the land is in good condition. Asked what was going to be the greatest main crop variety of the future, Mr. Scarlett said he did not yet know. The Factor certainly stood at the top at present, but it was impossible to obtain sufficient tubers of proper seed size. Table Talk would eclipse The Factor. The huge building is well built of brick and the roof is supported by brick pillars. No artificial heat is used. No damage has ever been done by frost. This is partly accounted for by everything being dry. In the event of severe frost sacks, mats, and sheets are in readiness to cover up the stacks of boxes. *Traveller.*

Horticultural Examinations. — The remarks by W. Watson, in a recent issue, concerning the R.H.S. examinations will, I feel sure, be endorsed by many who read them. I for one maintain that the examinations are not so satisfactory as they might be. In nine cases out of ten the practical man is beaten by the theoretical student in paper work. I am confident a man's abilities cannot be justly gauged from what he may put on paper. The student at college is trained mainly so that he or she may succeed in examinations, and so reflect credit on their teachers and themselves. Such credit is certainly not misplaced; but what a sorry figure such a person would look if placed in a position where he was made responsible for the maintenance of a constant supply of fruit, flowers, and vegetables for a large private establishment or for market purposes. The class of gardener I admire is one with an aptitude for his work and intelligence to make the best use of his knowledge. The holding of certificates does not show that the holder has these very necessary qualifications. The man who is interested in his profession will naturally be observant and study what applies to his work. What man can expect to get on without? I sat at the last examination held by the R.H.S. for gardening dealing with work in public parks, etc. I considered the questions were excellent. The practice of verbally questioning the candidates will, I hope, in the future be the principal form of examination. An examiner can form a much better idea of the amount of the intelligence and the knowledge a candidate has of his work by that means than by the inspection of any answers on paper. The time allowed is not sufficient, and I believe this was the general opinion. *B. Attersea.*

London County Council Gardeners.—An examination held by the Royal Horticultural Society can be of little use in ascertaining the qualifications of gardeners employed by the London County Council. Evidence of previous horticultural training has to be forthcoming before a gardener is employed in the parks in a temporary capacity, then he has to work for three months as a probationer, and obtain the approval of the park superintendent by the satisfactory performance of his duties. It is utterly unreasonable that more than this should be expected, but, in addition, a medical examination has to be passed before a gardener is placed on the permanent staff. Now a further examination is proposed. According to the requirements of the London County Council the social status of the gardener has fallen to a level with the resources of his pocket. No other conclusion is admissible when practical gardeners, and scientific botanists withal, are expected to pick up dirty paper and orange-peel, and generally act as scavengers in the parks, for 27s. or even 30s. per week. It would, however, be interesting to see how the men employed by the Board of Works as labourers, and now classed as gardeners, would figure in such an examination. And yet in many instances a park superintendent will say these are just the men he wants. *Straight Tip.*

Proposed Federation of Gardeners' Societies.—With the exception of one dissentient review of my proposals, the replies have been very gratifying. The following suggestions will perhaps lead us nearer to our goal:—(1) Will all Secretaries of Gardeners' Mutual Improvement Societies kindly post me the name of the Society they represent, with their own address, and add a few supplementary remarks as to their members and their ideas of the proposed federation outlined in my letter in the *Gardeners' Chronicle* for February 17. (2) The fixing of a suitable date and place when representatives can attend and discuss the matter, and appoint a provisional committee to draw up a scheme, which could afterwards be submitted to another meeting at a later date for confirmation. *Harry Boshier, 62, High Street, Croydon.*

The Weather in Co. Kildare.—It may interest some readers to hear of the very severe February that we have experienced in this cold, ungenial locality. There was frost on twenty-five nights, and as a rule from 9° to 13° of frost, with a total for the month of 225°. This is by far the most severe February experienced here since 1895, when the total for the month was 333°, and on the coldest night, February 7th, there was 30° of frost. *F.B.S., Straffan Station, Co. Kildare.*

The United Horticultural Benefit and Provident Society. — The special general meeting which will precede the ordinary general meeting on Monday next, the 12th inst., will be of more than usual interest, and it is hoped that country members will attend if possible. The object of the special meeting being to confirm the amended rules as compiled by the committee, it would be a considerable gain to them to feel that members generally took sufficient interest in the society to come forward and support a work which has given them a considerable amount of trouble, and though the alterations are not likely to in any way affect the general working of the society, there are a few important points which all members should consider. The special general meeting is called for 5 p.m. The ordinary annual general meeting takes place at 8 p.m. *A. H.*

The Late George Norman.—I have no intimate knowledge of his early career further than he was for some time at Linton Park, Maidstone, with, I believe, "Mr. Ballantyne" as his foreman, and I think I shall be right in saying that "Mr. Groom" was head at that time there. His next move was to Bedford, as gardener to — Maguire, Esq., M.P., whence he went to Hatfield in May, 1876, where he succeeded Mr. Ed. Bennett, who eventually established a name as a grower of Grapes for market at Potter's Bar and elsewhere. At the time of Mr. Norman's appointment much had been done, and much more remained to be done, in the thorough competition of the then comparatively new garden. On my last visit to Hatfield he called my attention to the fact that on his taking charge the fruit trees, both Apples and Pears, were so severely trained (goblet fashion) that little, as well as inferior, fruit was the result. He saw this was a wrong practice, and allowed the trees greater freedom, with the result that finer or more prolific trees than those now to be seen there could not be imagined. The wall trees, too, were grandly trained, and in first-class fruiting condition. Mr. Norman had few equals in the culture of indoor fruit, Grapes, Peaches, Figs, Strawberries. The writer was once told that Mr. Norman had never been without Grapes "old or new," for 20 years. He was a great believer in copious supplies of water, both for Vines and Peaches. In the culture of Strawberries he was unexcelled, and annually grew between 7,000 and 8,000 plants in pots, and in the early eighties he used annually to take the 1st prize at Kensington with the then standard varieties, President, Sir J. Paxton, and Sir C. Napier. For picking at this period Black Prince was grown largely. The call upon the resources of Hatfield for decorative plants and flowers in the great receptions held by the late Marquis of Salisbury during his career as Prime Minister was very great. When one considers the work and anxiety attendant upon the carrying out of these and many other duties it is not to be wondered at that the strain proved too much for even such a fine physique as Mr. Norman possessed, and after a severe illness he had to recruit his health in the south of France. Turning again to plants, all classes, stove and greenhouse, were well represented. At one time he had at least 200 plants of Adiantum Farleyense in robust growth, the finest I ever saw. Orchids too were well grown, and of later years Carnations claimed his attention. He confined the varieties to two or three, but grew them by the thousand. All round the master-hand was apparent. The flower gardens were kept up well, the east with Roses, the south with Fuchsias, Cannas, Heliotrope, Ricinus, &c., and the west garden with ordinary bedding plants, the whole numbering 30,000 plants. Mr. Norman was a man of untiring energy, full of tact and resource, a strict disciplinarian, yet tender-hearted and sympathetic in time of need. As a member of the Fruit Committee he was respected and beloved by all his colleagues, and it was owing to his ability that the V.M.H. was conferred upon him. *Geo. Dyke, The Gardens, Garston Manor, Watford.*

——The deeply lamented death of this eminent and truly genial gardener creates a great void in the fruit committee of the Royal Horticultural Society. He was one of the oldest members, one of the most esteemed, and a very regular attendant. Few, if any, of his colleagues, although most of them had observed in him some evidence of occasionally highly strung nervousness, realised that his end was so near. Of his merits as a servant it is for others to speak, but many of his fellows can testify to his great ability as a gardener, and of his devotion to and love for his profession. Those of us who were his colleagues on the Gardeners' Dinner Committee of 1903 had opportunities to know and appreciate him beyond those possessed by others. How thoroughly he enjoyed the work the arrangements for that dinner imposed upon him! He entered into it all with almost boyish interest. It is a strange coincidence that the first one taken from our number, and also an old and esteemed member of the Fruit Committee, James Smith, should, like George Norman, have been a faithful servant and head gardener to an ex-Prime Minister. May many years elapse 'ere we shall have to mourn a farther break. That dinner committee became more than a mere combination of British gardeners. It was literally a brotherhood, knit together by the warmest ties of friendship and fellow-feeling. Whether at Hatfield, or on the fruit committee, or as a V.M.H., may any successor be as worthy our esteem as was our old friend George Norman. *A. D.*

Fumigation with Hydrocyanic Acid Gas.—Notwithstanding *A. D.'s* criticism of Mr. Dobson's article on the above subject, it is a well-known fact amongst scientists and horticulturists that hydrocyanic gas is both cheaper and more effectual for the destruction of insect life than any known insecticide, and if it is used in the proper quantities with the temperature of the house low and the foliage of the plants dry it is perfectly harmless to the plants. I have had some experience in the use of this gas, and consider there is as much difference between it and ordinary insecticides for the extermination of mealy bug, ants, scale, &c., as there is between the old-fashioned aphis brush and nicotine vaporisers; but, unfortunately, the gas is so deadly to human beings that it has not been generally used. To overcome this difficulty I have invented a machine which enables the operator to drop the cyanide into the acid whilst he is outside the house and after the door is locked, thus preventing any risk to those using it. I shall feel pleasure in forwarding the Editor diagrams of the same after a week or two if he will insert them in the *Gardeners' Chronicle.* The machine may be had for a few shillings. *F. C. Edwards, Nurseryman, Leeds.* [We shall be pleased to see the drawings. Ed.]

——"If insect life in a plant house be destroyed, what matter even if a few human lives be taken also" (see *A. D.* on p. 140). At last the great problem of solving the unemployed question seems likely to be solved—the great philanthropist who advises cyaniding the surplus gardeners must receive some public recognition. *A. D.* is not to be commended, however, in the use of such sarcasm. I should be sorry to lose any of my brother gardeners by fumigation, but I wish this philanthropic gentleman *A. D.* would give cyaniding a trial. His idea of the present day gardener is a poor one; possibly cyaniding may interfere with or supersede some existing interest, but the day for the rag and paper is gone. *W. H. Clarke, Aston Rowant, Oxon.*

——*A. D.* says on p. 107:—"One is tempted to ask the question whether the game is worth the candle on account of its grave dangers to both human and plant life." Is this the only poisonous insecticide in use amongst gardeners to-day? What about the arsenical and nicotine compounds —are they not dangerous to human life, though to a less degree? I fully agree with *A. D.* in respect to the danger by cyaniding to human life, and I fully warned others of the danger and the necessity for taking proper precautions, and if this is done—which I think it will be by most gardeners, whom I credit with being a broad-minded and level-headed class of men—there need be very little fear of fatal results. *A. D.* infers that no one of good sense would be disposed to dabble with such a dangerous article. It is very comforting to me to learn from letters received and articles which have appeared in the *Gardeners' Chronicle*, that there are others who share this compliment with us, but may I claim the credit of having "sufficient good sense" to get rid of the bug and scale, and turn the labour to better account? *A. D.* says it was my misfortune having the bug, I knew it to my sorrow; it was here before I came, but in won't be here when I go away. In conjunction with two first-class foremen, I had striven vigorously from the first to free ourselves of the pests, but all to no purpose. We could check it, but nothing more, and where bug is plentiful and labour scarce one is tempted to resort to drastic measures. As regards the danger to plants, I fail to see that there is more danger in this insecticide than in other "patent insecticides," for all are more or less dangerous to plant life if they are not used with the necessary precautions, and I am convinced (with all due appreciation of other fumigants for general work) none of them is so effectual in ridding plants of bug and scale. The harm done to the plants here by cyaniding from first to last is practically nothing, the most is a very few leaves touched, and I gave my experience in full in order that others might avoid even this small amount of harm. I lost a number of plants by the constant syringing, sponging, with other insecticides. On looking up my notes taken in past years, I note the entry, "men sponging, &c." Alas, too often this was to all intents and purposes waste labour, and very discouraging to all concerned, because no headway was being made with other work, and one must make some attempt to cope with the ever increasing amount of work at this time of the year. I am thankful to say, so far this year no time has been wasted on sponging. I am hoping henceforward to be included amongst those gardeners who are enabled to keep their house clean with patent insecticides; further that these gardens may be included amongst those where gardening is well done. I am afraid that a great many gardens could not be so described if the line of demarcation between good and bad gardening is the presence or absence of bug and scale. *W. H. Dobson, Stapleton Gardens, Pontefract.*

Grape Diamant Traube (see p. 138).—If reference be made to the issue of *Gardeners' Chronicle* for August 26, 1905, p. 175, the officers of the Royal Horticultural Society may find full particulars of this Grape. I am glad that the reputation of the R. H. S. for the cultivation of choice varieties of Grapes will be maintained at Wisley. If I can help I shall be glad to do so. *W. Roupell, Harvey Lodge, Roupell Park, S.W.*

SOCIETIES.

ROYAL HORTICULTURAL.

March 6.—After an interval of three weeks the Royal Horticultural Society's Committees met on Tuesday last in the Hall, at Vincent Square, Westminster. The display was more extensive even than usual, and all the available space for exhibits appeared to be pressed into service.

The most imposing group of Orchids was contributed by W. A. Bilney, Esq., who was awarded a Gold Medal. The Orchid Committee inspected many novelties and awarded three First Class Certificates, seven Awards of Merit, and one Botanical Certificate, exclusive of the Diplomas given for Dendrobiums.

The Floral Committee recommended five Awards of Merit to novelties which are mentioned below, and in respect to the very large number of groups exhibited were seventeen medals awarded, including one of gold to Messrs. Cutbush & Son.

The Fruit and Vegetable Committee had little to inspect, and their only award was that of a Silver Banksian Medal.

At the general meeting of Fellows in the afternoon 114 candidates were elected to the Society, and a paper on the "Nomenclature of Plants" was read by Mr. G. W. Bulman.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. H. B. May, Geo. Nicholson, R. Wilson Ker, Jno. Green, C. J. Salter, J. H. Barr, T. W. Turner, Jno. Jennings, W. Howe, H. J. Cutbush, W. Bain, Chas. Jeffries, Chas. Dixon, R. C. R. Nevill, W. Cuthbertson, H. J. Jones, Chas. E. Pearson, Chas. E. Shea, E. H. Jenkins, W. J. James, Jas. Walker, Jas. Douglas, C. T. Druery, W. G. Baker, C. R. Fielder, R. Hooper Pearson, G. Reuthe, R. W. Wallace, and Jas. Hudson.

Some very good varieties of Hippeastrum were shown by Lord Rothschild, and one, named Pomona, a white flower, with bright red-coloured stripes, and a flower in which the natural green colour had been quite eliminated, was perfectly distinct and attractive. All the plants were very strongly-grown specimens, and the variety Pomona had five flowers on the spike. Lachenalia glaucina, from the same garden, is a very old but little-known species, having very pale blue, erect flowers produced on spikes which grow 14 or 15 inches in height.

Messrs. W. Cutbush & Son, Highgate, London, N., set up a collection of forced flowering plants that formed an outstanding feature of the exhibition; indeed, it was quite the largest group that the Hall has so far accommodated, and occupied the major portion of the side of the building opposite the entrance. Not alone by reason of its size was the display noteworthy, but boldness of grouping, excellence of material, and taste in arrangement all contributed to a magnificent effect. The design was that of an undulating bank, in which a central bay was prominent, with other smaller bays at either end. The usual subjects were included—Azaleas, Ribes, Wistarias, Spiræas, Viburnums, Magnolias, showy species of Cerasus, Pyrus and Prunus, Deutzia, and a host of other beautiful flowering trees and shrubs. Especial reference must be made to the Magnolias, which were shown in splendid form, and the examples of such beautiful species as M. Soulangeana, M. Lenné, and M. Alexandrina would be difficult to surpass. In another part of the Hall Messrs Cutbush arranged a temporised rockery, and here again was seen an example of good skill and effective planting, many beautiful spring flowers being thus presented in a natural manner. (Gold Medal.)

Mr. L. R. Russell, Richmond, Surrey, filled the Concert platform with forced flowering shrubs. A batch of white Lilac—Mad. Lemoine —looked well in the centre, while other showy plants, such as Azaleas, Laburnum, Deutzia, Almonds, Cherries, Forsythia suspensa, etc., were arranged on either side. Some small plants of Clematis formed a pleasing edging. (Silver Gilt Banksian Medal.)

Messrs. B. S. Williams & Son, Upper Holloway, London, staged a mixed group of plants and flowers. At the back were a number of large plants of Rhododendrons—R. Cunningham's White being very fine—Bamboos, Lilacs, etc., and in the foreground a rock-garden with suitable Alpine plants. Hippeastrums were also included in the display.

Messrs. Thos Cripps & Son, Tunbridge Wells, Kent, displayed a group of ornamental Maples, having many handsome forms of the palmatum and japonicum types. (Silver Gilt Banksian Medal.)

Messrs. W. Paul & Son, Waltham Cross, Herts., staged a very pretty group of flowering Almonds and Peaches, the small trees being literally covered with their showy flowers. (Silver Banksian Medal.)

Messrs. R. Veitch & Son, Exeter, showed an example of Prunus Mume flore plena. The flowers are pale in colour and have but little doubling. Erica carnea was also shown by Messrs. Veitch.

Messrs. Sutton & Sons, Reading, entirely filled one of the extensive side tables with Cinerarias of the ordinary florists' type. The plants were dwarf, but sturdy in habit, and they carried neat, compact trusses of flowers of many beautiful shades of colour, especially handsome being some of the "blues" and "reds." (Silver Flora Medal.)

Messrs. Cannell & Sons, Swanley, Kent, also exhibited Cinerarias, but of the taller growing "stellata" type. The dense cymes of small, bright flowers possessed a wide range of colouring, and gave evidence of careful selection. The same firm also displayed trusses of Zonal Pelargoniums, Coleus Shirensis, and a new flaked Carnation named Duchess of Marlborough, the ground work being buff, pervaded and striped with rosy red. (Silver Banksian Medal.)

Mr. H. B. May, Dyson's Road Nursery, Upper Edmonton, had a group of decorative plants, in which we noticed the sweet-scented Pelargonium Clorinda, Boronia megastigma, Clematises, and a nice batch of Cinerarias in flower. (Silver Flora Medal.)

From the gardens of A. de Rothschild, Esq., Halton, near Tring (gr. Mr. Sanders), was exhibited a group of plants of Hippeastrums, the variety being Crimson Prince, with self-coloured flowers from which the natural green colour is entirely eliminated. (Silver Gilt Flora Medal.)

Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea, staged miscellaneous greenhouse flowering plants—Streptosolen Jamesoni, Coleus Shirensis, Eupatorium petiolare, Camellia reticulata, Rhodondron Veitchianum, etc. (Silver Banksian Medal.)

Messrs. William Bull & Sons, King's Road, Chelsea, showed a collection of small Palms, all, or almost all, of which were of different species.

The exhibit of Messrs. R. & G. Cuthbert, Southgate, Middlesex, formed an innovation in the matter of arrangement. The group consisted of beds of Hyacinths, and was arranged on the floor of the Hall. The beds were diamond shaped, the intervening spaces being worked out in Moss, while cocoa-nut fibre did duty for soil in the beds. The trusses of flowers were well developed, and the blending of the colours was in good taste, one of the best combinations being seen in a bed with a pink centre and an edging of white. (Silver Gilt Flora Medal.)

Mr. John May, St. Margaret's, Twickenham, had a large batch of Cyclamen in the East Annexe. Mr. May is a most successful cultivator of these plants, judged by the examples exhibited, many of the specimens having their foliage entirely hidden by the masses of flowers, which were of large size and very pure in colour. (Silver Gilt Flora Medal.)

Roses, the first of the season, were shown by Mr. George Mount, Canterbury, Kent, in the usual style for which this grower is famed. The varieties were Mrs. R. G. Sharman Crawford, Capt. Hayward, and Mrs. John Laing.

Messrs. Hugh Low & Co., Low's Nursery, Enfield, had a very pretty display of Carnations, principally of the American type, and some plants of "Low's Salmon" Cyclamen.

Mr. A. F. Dutton, Iver, Bucks, displayed a group of Carnations similar to those he exhibited at the last meeting. A fancy basket, decorated with coloured ribbon, and filled with blooms of the variety Mrs. T. W. Lawson, was much admired. (Silver Gilt Banksian Medal.)

Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, Middlesex, staged many rare and choice Ferns, the whole forming an excellent exhibit of these plants. Several large plants of such species as Osmunda gracilis, Platycerium grande, P. Veitchii, etc., were elevated above the general collection, which included such choice things as Polystichum triangulare laxum, Adiantum reniforme asarifolium, Todea pellucida, Lomaria attenuata, Davallia canariensis elegans, etc. (Silver Gilt Banksian Medal.)

The Guildford Hardy Plant Nursery Co., Millmead, Guildford, staged a neat collection of hardy plants in flower. We noticed a nice clump of Erica carnea, the colour of the flowers being well developed. Iris reticulata was also shown well; Doronicum Columnæ was nicely flowering, the inflorescences being scarcely more than an inch above the ground level.

Messrs. Barr & Sons, 11, 12 and 13, King Street, Covent Garden, displayed hardy and other flowers. A batch of Lachenalias contained many improved forms, one of the best being the variety Ruth Lane, which has large pendulous flowers tipped with purple. Daffodils, including N. minimus, Irises, Saxifrages, and Hellebores, and numerous other early-flowering subjects found a place in the collection. Among the many species of Helleborus was the curious H. argutifolius, not the least beautiful feature of which is its deeply-serrated, trifid leaves. (Silver Banksian Medal.)

The Misses Hopkins, Mere, Knutsford, displayed a small group of Alpine flowers.

Messrs. John Peed & Son, West Norwood, London, S.E., staged a collection of rock-garden plants, also Lachenalias.

Messrs. Geo. Jackman & Son, Woking, Surrey, also contributed to the displays of Alpine plants, having many interesting plants in flower, including a fine batch of Shortia galacifolia. A double-flowered form of Adonis amurensis was pleasing. (Silver Banksian Medal.)

Messrs. J. Cheal & Sons, Crawley, staged three boxes containing Alpine plants, among which were some well-coloured Primroses, especially one named P. rosea. Dwarf Conifers and small-growing shrubs were staged as a background to the exhibit.

Messrs. G. & A. Clark, Ltd., The Nurseries, Dover, Kent, set up a temporary rockery, on which were arranged suitable subjects for a rock-garden. A nice batch of Iris reticulata was noticed; coloured Primroses were also shown well in this group.

Mr. G. Reuthe, Fox Hill Hardy Plant Nursery, Keston, Kent, made a bright display with Irises, Hepaticas, Scillas, Crocuses, and other spring flowers. Rhododendron ciliatum was shown in good form by this exhibitor. (Silver Flora Medal.)

Mr. M. Pritchard, Christchurch, Hants, exhibited a small collection of hardy flowers. We noticed Tulipa Kaufmani nicely in flower, and sprays of Hamamelis Zuccariniana.

A pan of Pinguicula caudata, with very deeply-coloured flowers, was shown by J. T. Bennett-Poe, Esq., Holmwood, Cheshunt (gr. Mr. Downes). The form was shown under the name of P. c. superba.

Messrs. T. S. Ware, Feltham, Middlesex, contributed an exhibit of hardy plants and flowers that bloom earliest, and several representatives of Primula species, Narcissus, etc. (Bronze Flora Medal.)

AWARDS OF MERIT.

Carnation Elliott's Queen.—This is a moderately fragrant flower, of large size, commendable form, and has non-splitting calyces. The colour is of a shade of rose, and the petals are only very slightly fringed. Shown by Mr. H. Elliott, Hassocks, Sussex.

Carnation Nelson Fisher.—This variety, like that already mentioned, belongs to the tree or winter-flowering section, and was shown on this occasion by Mr. A. F. Dutton, but was raised in America. The flowers are of large size and of violet-rose colour or a deep shade of cerise.

Davallia canariensis elegans.—A very elegant variety of this well-known species, having very finely-divided fronds and pinnæ. Shown by Messrs. J. Hill & Sons.

Freesia Tubergeni.—Some Freesias exhibited under this name by Mr. C. G. van Tubergen, Haarlem, Holland, were of violet colour, with whitish throat, and had a spot of bright yellow at the extreme end of throat. Some of the inflorescences bore as many as ten flowers each, showing that the variety is a good grower. The flowers are very pretty, and will be sure to meet with appreciation.

Polypodium phymatodes corymbosum.—A corymbose variety of this most distinct species, which, in the habit of growth, reminds one of a slender-growing Platycerium, or a crested Pteris. The plant shown was growing over an old stem of tree Fern. From Mr. H. B. May.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, the Right Hon. the Earl of Tankerville, Jas. O'Brien (hon. sec.), Harry J. Veitch, H. Little, W. Boxall, W. H. Young, H. G. Alexander, H. A. Tracy, H. G. Morris, T. W. Bond, W. H. White, A. A. McBean, Arthur Dye, W. A. Bilney, J. W. Potter, H. T. Pitt, W. Cobb, R. G. Thwaites, F. M. Ogilvie, S. Briggs-Bury, G. F. Moore, N. C. Cookson, H. Ballantine, E. Ashworth, J. Colman, De B. Crawshay, and Francis Wellesley.

The Society's Gold Medal was awarded to W. A Bilney, Esq., Fir Grange, Weybridge (gr. Mr. Whitlock), for a splendid group occupying one side of the central staging in the Hall, and composed principally of Dendrobiums, among which a very great variety of the best forms of D. nobile and D. Ainsworthii were represented. The centre was of the pure white form of D. nobile album, behind which were large masses of the finely coloured D. nobile nobilius, specimens of which were also displayed at intervals along the group. Forms of D. Cybele were varied and good, the best being D. Cybele nobilius. The D. Ainsworthii class included the fine D. A. Hazlebourne variety, and some excellent D. splendidissimum. Other good displays were of D. Wardianum with some hybrids of it; D. pallens, D. xanthocentrum, D. Wiganiæ, and Wiganianum varieties; D. thyrsiflorum, D. albo-sanguineum, D. Melpomene, D. Brymerianum, &c.; Cymbidium eburneum, various Odontoglossums, Oncidiums, &c.

From the Right Hon. Lord Rothschild's gardens, Tring Park (gr. Mr. Arthur Dye), came a group of the stately Lissochilus Horsfallii, imported from West Africa, and in the culture of which the Hon. Walter Rothschild instituted a special method, which has been successful in the highest degree. This fine plant seems only to be known from the original specimen which flowered in 1864 with Mr. Horsfall, of Bellamour Hall, Staffordshire, and which was figured in the *Botanical Magazine*, t. 5486, and was soon lost. It has probably been imported in a few examples since, but never was grown and flowered again until now at Tring Park. Mr. Walter Rothschild's plan was to grow it as a river-bank plant, with the Nymphæas, or in tubs of water, and when strongly growing frequent waterings of liquid manure were given. The result has been that the specimens formed broad, bright green plicate leaves and stout spikes some 5 feet in height (branched in some instances), and bearing from 70 to 100 large flowers and buds on each spike. The four fine specimens shown were arranged with the pretty Zululand Asparagus myriocladus, and with tall Palms at the back; the group was voted a Silver Gilt Flora Medal and the species given a First Class Certificate. (See Awards.)

Messrs. Charlesworth & Co., Heaton, Bradford, secured a Silver Gilt Flora Medal for a very fine group rich in hybrid Odontoglossums, among which were the new O. Gladys (cirrosum × Harryano-crispum), a prettily spotted flower; O. amabile Charlesworthii, tinged with rose and spotted with red-brown; fine O. Harryano-triumphans, O. Rolfeæ, O. Loochristyense, and many others. The Cattleyas included a good selection of C. Trianæ, two pretty C. Enid; and other good things were Zygopetalum crinitum cœruleum, the fine white Brasso-Cattleya Queen Alexandra, several fine yellow and crimson Lælio-Cattleya Myra, the rich reddish L.-C. Lucasiana Jeanette, &c.

Baron Sir H. Schroder, The Dell, Egham (gr. Mr. Ballantine), was awarded a Silver Flora Medal for a splendid group of magnificently-grown Calanthes, the bulbs being of enormous size and in perfect condition. The centre was of Calanthe Baron Schroder, the best of its class, raised at the Dell. The tall spikes bore numerous large flowers, with white sepals and petals tinged with rose at the base, and rose-purple lip with dark maroon eye. The outer five or six rows were of Calanthe Regnieri, which has never, perhaps, been seen so well grown.

Messrs. Jas. Cypher & Sons, Cheltenham, obtained a Silver Flora Medal for an excellent group displaying great variety. The Dendrobiums were very fine, especially D. Wardianum hololeucum and other albinos, and with them were scarlet Epiphronitis Veitchii, and Sophronitis; Phalænopsis Rimestadtiana, some good forms of Cattleya Trianæ, Lælia anceps Schroderiana, Lælio-Cattleya Dominiana of fine dark colour, Odontoglossums, hybrid Cypripediums, &c.

Messrs. Sander & Sons, St. Albans, secured a Silver Banksian Medal for an interesting group of good things, in the centre of which was a fine specimen of Ansellia africana with three large, branched spikes. Dendrobium nobile nobilius and other Dendrobes were good; varieties of Cattleya Trianæ well represented; Brasso-Cattleya Empress of Russia, Lælio-Cattleya × Berthe Fournier, Cymbidium eburneo-Lowianum, Phaius Marthæ, forms of Cœlogyne cristata, and good varieties of Cypripedium insigne were also noted.

R. Briggs-Bury, Esq., Bank House, Accrington (gr. Mr. Wilkinson), was awarded a Silver Banksian Medal for a small group, including three of the fine Cypripedium Beekmanni, C. Maudiæ, one of the varieties having a peculiar yellow tinge; C. villosum magnificum and others. Of Odontoglossums noted were O. crispum Empress of India, a finely-blotched flower; two O. Loochristyense, [illegible]

Messrs. Stanley & Co., Southgate, were voted a Silver Banksian Medal for a group of very fine specimens of the beautiful cool-house Oncidium concolor, each with three or four stout sprays of large clear yellow flowers.

M. Chas. Vuylsteke, Loochristi, Ghent, was given a Silver Banksian Medal for a small group of rare hybrid Odontoglossums, including O. bellatulum, O. Wiganianum, O. Wilckeanum, O. Rolfeæ O. Vuylstekei, and others all of fine quality.

Francis Wellesley, Esq., Westfield (gr. Mr. Hopkins), showed Lælio-Cattleya Mrs. R. A. H. Mitchell (callistoglossa × Martinetti), a large flower of a bright rose tint with purplish crimson lip, L.-C. Marnhami (callistoglossa × Aphrodite), a pretty hybrid with broad petals. Sepals and petals pale rosy lilac, lip broad and marked with purplish crimson. Cypripedium Miss Marian Sillem, pure white densely spotted with purple, and C. Mrs. W. E. Dickson, a fine C. Rothschildianum cross.

C. J. Lucas, Esq., Warnham Court (gr. Mr. Duncan), showed a group in which the showy Lælio-Cattleya Warnhamensis was specially fine; with them were Phaius maculatus, Angræcum sesquipedale, Cymbidium Lowio-eburneum, Cypripedium Warnhamense, C. calypso, with six flowers, &c. (Bronze Banksian Medal.)

Messrs. Hugh Low & Co., Enfield, staged a group in which were good Dendrobium Boxalli and D. crassinode, Pleurothallis Roezlii, Saccolabium Harrisonianum, Oncidium sarcodes, Epidendrum Endresio-Wallisii, Cypripedium Helen II. with four flowers, the fine white Lycaste Skinneri alba magnifica, Phalænopsis Schilleriana, &c. (Bronze Banksian Medal.)

Messrs. Heath & Sons, Cheltenham, showed a small group, including two nice specimens of D. Cassiope × Dominianum, the fine D. nobile Heathii, several D. barbatulum, Cœlogyne cristata, Odontoglossums, &c.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), showed very fine specimens of Dendrobium Sybil, D. Wiganiæ album, D. W. illustre (see Awards), and D. Euryalus Apollo album.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed Dendrobium Ainsworthii Thompsoni, and a good Schneiderianum.

Jeremiah Colman, Esq., Gatton Park, showed finely-flowered specimens of Dendrobium Wiganiæ, D. Wiganianum, D. Ainsworthii, D. Venus, D. Othello, D. nobile nobilius, D. n. alba, and other Dendrobes, including the fine white D. × Colmanæ.

M. G. Vincke-Dujardin, Bruges, sent Cattleya Trianæ cœrulea, with a slaty-blue front to the lip, &c.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), showed the fine Phaius Clive which had previously obtained an Award of Merit.

Elijah Ashworth, Esq., Harefield Hall (gr. Mr. Holbrook), showed Dendrobium Haywoodæ Harefield Hall variety, and Cypripedium George Hackenschmidt (tenebrosum × insigne, Harefield Hall).

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), showed Chysis lævis superba, a fine form with orange-red outer halves to the segments.

H. S. Goodson, Esq., Putney (gr. Mr. G. Day), sent Cypripedium H. S. Goodson (Spicerianum magnificum × Lathamianum).

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), showed the handsome Dendrobium Thwaitesii.

H. T. Pitt, Esq. (gr. Mr. Thurgood), showed Odontoglossum Wilckeanum, Pitt's variety, one of the very best Wilckeanum varieties, with very large, pale yellow, heavily blotched flowers of fine substance, the colours being enhanced by the polished surface.

De B. Crawshay, Esq., showed the unsurpassed Odontoglossum triumphans Lionel Crawshay, O. t. Crawshayanum, and O. Andersonianum Youngi.

AWARDS.

First Class Certificate.

Lissochilus Horsfallii, from The Hon. Walter Rothschild, M.P. A noble species with lanceolate, bright green leaves and tall stout spikes of 70 or more flowers of good size. Sepals upturned and recurved at the tops, tinged and lined dark purple. Petals orbicular and extended forward, white suffused with rose. Side lobes of the lip erect, greenish with purple markings; front lobe deep rose purple; base of the lip white streaked with purple; callus ivory white. A most remarkable and handsome species. Four plants were shown, one bearing three spikes.

Sophro-Cattleya Warnhamensis "Cerise," from Sir W. H. S. Marriott, Blandford (gr. Mr. Denny), flowers of good size, bright reddish scarlet. The spike bore four flowers.

Odontoglossum Fowlerianum (Rossii rubescens × cirrosum), from Messrs. Sander & Sons. A very pretty hybrid with narrow sepals and petals densely spotted with dark purple and tipped and margined bright rose purple, the long blade of the lip being of the same colour, the base and callus being yellow.

Award of Merit.

Dendrobium Wiganiæ illustre, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White) A model flower, cream-white tinged with rose; disc of the lip orange with heavy maroon blotch.

Dendrobium nobile "Perfection," from Messrs. Jas. Cypher & Sons. Probably the broadest and roundest form of D. nobile, and finely coloured magenta rose with a dark base to the broad lip. A home-raised seedling between D. nobile elegans and nobilius.

Odontoglossum Rossii immaculatum, from De B. Crawshay, Esq. (gr. Mr. Stables). A very pretty variety with whitish sepals tinged with rose and entirely unspotted. Petals and lip white with a faint blush tint. Pretty and unique.

Dendrobium Wiganianum, Gatton Park variety, from Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound). A large and finely formed flower of a cream-white tinted with rose, and a purplish disc to the lip.

Brasso-Cattleya Digbyano Mendelii, var. Fortuna, from J. Bradshaw, Esq., Southgate (gr. Mr. G. G. Whitelegge). Flowers with a slight greenish tint.

Pleione yunnanensis from Messrs. Sutton & Sons, Reading. The pretty rose-lilac species described in the *Gardeners' Chronicle*, Feb. 24, p. 115.

Odontioda Heatonenseis from Messrs. Charlesworth & Co., Heaton, Bradford. A most interesting hybrid between Odontoglossum cirrosum and Cochlioda sanguinea. Flowers white, densely spotted with rose-pink and similar in size to those of O. odoratum, but broader in the segments.

Botanical Certificate.

Cynorchis compacta, from Baron Sir H. Schroder. A pretty dwarf tufted species with many erect spikes of white flowers.

Cultural Commendation.

To Mr. W. H. White (gr. to Sir Trevor Lawrence, Bart.), for a splendid specimen of Dendrobium Sybil.

To Mr. W. H. White for a fine plant of the blush-white Dendrobium superbum Burkei.

To Mr. W. P. Bound (gr. to Jeremiah Colman, Esq.), for Masdevallia Pourbaixii, with many flowers.

Diploma Awards.

Dendrobium nobile Varieties.—*1st Diploma:* Dendrobium nobile "Perfection" from Messrs. Jas. Cypher & Sons. *2nd Diploma:* Dendrobium nobile Dormanianum from Jeremiah Colman, Esq.

Hybrids of D. nobile and D. aureum.—*1st Diploma:* Dendrobium Wiganianum, Gatton Park variety, from Jeremiah Colman, Esq. *2nd Diploma:* Dendrobium Ainsworthii intertextum from Baron Sir H. Schroder.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), and Messrs. Jos. Cheal, Geo. Woodward, S. Mortimer, A. Dean, H. Parr, A. R. Allan, W. Pope, R. Lye, W. Crump, H. Markham, H. J. Wright, Ed. Beckett, Jas. Vert, J. Lyne, Jos. Davies, F. Q. Lane, Geo. Reynolds, J. Willard, Geo. Wythes, J. McIndoe, C. Foster, W. H. Divers, O. Thomas, P. C. M. Veitch, W. Poupart, and J. Jaques.

The lamented death of the late Mr. George Norman has removed a prominent member of this Committee. Expressions of sympathy with the members of the family were made at the meeting, and it was decided to send a formal letter of condolence to Mrs. Norman.

The principal exhibit brought to the notice of the Committee was a collection of 33 dishes of Apples and Pears, shown by J. B. Fortescue, Esq., Dropmore, Maidenhead (gr. Mr. C. Page). Some good plates of fruit were noticed, but it was apparent that the majority were quite past their season. Bramley's Seedling, Hambling's Seedling, Hambledon Deux-Ans, and Gascoigne's Scarlet were among the best samples. The specimens of Catillac Pears had the mellow appearance seen in choice dessert varieties. (Silver Banksian Medal.)

Mr. J. Cook, Forde Abbey Gardens, Chard, showed a dish of Veitch's Early Wonder Dwarf Beans.

Mr. Wythes, Syon House Gardens, Brentford, had a plate of Carter's Sunrise Tomato, exhibited to show its use for winter fruiting. The fruits were of moderate size only.

Mr. Foster, University College Gardens, Reading, displayed excellent samples of forced Chicory.

The Superintendent brought specimens of Snow's Winter White and of Brydon's Peerless Broccolis from the trial grounds at Wisley. The inflorescences were lax and yellowish in colour, and the general opinion of the members was that the varieties were not equal to the old type of Snow's Winter White, consequently no award was made.

COMPLIMENTARY DINNER TO MR. WILLIAM MARSHALL, V.M.H.

There are few men who are better known or more respected by habitual visitors to the Royal Horticultural Society's meetings than Mr. William Marshall, who has just entered upon his 21st year as Chairman of the Floral Committee. In order to show their respect and express their congratulations on this auspicious event, Mr. Marshall was entertained at dinner at the Hotel Windsor on Tuesday evening last by the Floral Committee and their friends. The Committee has also presented Mr. Marshall with his portrait in oils, which, although not perfectly finished, promises to be a very faithful representation. Mr. Harry J. Veitch presided, and at his right hand were Mr. W. Marshall, Mr. H. B. May, &c., and on his left Dr. M. T. Masters. F.R.S., W. A. Bilney, Esq., &c., the company present numbering 75. Mr. Veitch, in proposing the toast of "Our Guest," said that he had known Mr. Marshall for more than 40 years. He had respected him a little as an entomologist, much as a philanthropist, and very greatly as an amateur horticulturist. Reference was made to Mr. Marshall's successful cultivation and exhibition of stove plants in the early sixties. These were subsequently partly given up for hardy Ferns and hardy plants generally. He had the honour of flowering Odontoglossum crispum (Alexandræ) first in this country, and two Orchid species at least bore Mr. Marshall's name. These were Thunia Marshalliana and Oncidium Marshallianum. Mr. Veitch went on to speak of Mr. Marshall's efforts in helping to found the United Horticultural Society, and of the unusually successful exhibition which was held in the Guildhall in 1865 (see *Gardeners' Chronicle*, Oct. 14, 1905, p. 287). The proceeds from that show, said Mr. Veitch, were the means used for establishing the United Horticultural Benefit and Provident Society, which has developed so much in its degree of usefulness. Mr. Marshall was one of those who helped to found the Royal Gardeners' Orphan Fund, and on Mr. Deal's death he was chosen as chairman of the executive committee. In addition to all this, Mr. Marshall has been a member of the Royal Horticultural Society's Council for many years, and, as we have already stated, chairman of the Floral Committee for 20 years.

Mr. Marshall, on rising to respond, was received with great enthusiasm and cheering. He commenced by thanking those present for the great honour they had done him, but he said they had placed him in a "deliciously difficult corner," because he had to speak of himself, which was not an agreeable subject. He showed a side light on to the circumstances that led to the Council abstaining for some years from recommending any of its own members as recipients of the Victoria Medal of Honour in Horticulture. They have departed from the custom as the circumstances have now become quite different, and as the gentlemen for which this was done were Mr. Harry J. Veitch and Mr. Marshall, the Council's decision will be generally approved. Mr. Marshall cordially recognised the kindness and loyalty that had always been shown him by members of the Floral Committee, and said that in the 20 years he had only been obliged to call a member to order on two occasions.

The next toast was proposed by Dr. M. T. Masters, F.R.S., and was that of "The Royal Horticultural Society." He said that his recollections extended further back than those of either Mr. Marshall or Mr. Veitch. His first recollection was of rather a painful character. The society was selling its library, museum, and everything possible. He was then deputed by the authorities of the Botanic Garden, Oxford, to buy some of the books, and now after a long stretch of time he had that day (Tuesday) assisted at a meeting held to consider the better management of the Lindley Library, which, however, was much more extensive than the original library. About 1860 he (Dr. Masters) joined the Floral Committee. In view of these reminiscences he was proud and pleased to see the measure of success the society was now enjoying. Mr. George Paul responded. Other toasts included "The Chairman," proposed by Mr. W. A. Bilney; "The Dinner Committee," proposed by Mr. R W. Kerr, and responded to by Mr. George Gordon, V.M.H.; and "The Artistes and Donors of Floral Decorations," proposed by Mr. A. Dean, and responded to by Mr. Tom Powley.

WILLIAM MARSHALL, V.M.H.,
who has entered on his 21st year as Chairman of the R.H.S. Floral Committee.

The tables were most tastefully decorated with winter flowering Carnations, but in front of the guest of the evening was placed a bowl plenteously furnished with flowers of Odontoglossum crispum. The musical part of the programme was contributed to by Messrs. R. and A. Marshall, Messrs. J. H., P. J., and Ted Berry, and Mr. Tom Powley. It was a matter of regret that Mr. J. F. McLeod who had done much towards securing a good programme was prevented from attending by reason of indisposition.

Obituary.

Thomas H. Sutton.—Deceased, who died after a painful illness at Sturford Cottage, Corsley, Wiltshire, on the 2nd inst., was well known in horticultural and agricultural circles. After obtaining good experience, which included some years spent at Keele Hall, Staffs., and at Blenheim Palace, he was appointed to the charge of the gardens and farm at Worksop Manor, the residence of the late W. I. Cookson, Esq., which position he retained for nearly 20 years. During the past 15 years Mr Sutton has had charge of the Wiltshire and Somersetshire residence and estates of that gentleman's son, Theodore Cookson, Esq. Under his management the Sturford shorthorn herd attained to a wide celebrity and met with many successes at the Royal and other shows.

GARDENERS' DEBATING SOCIETIES.

CHELMSFORD & DISTRICT GARDENERS'.—At the weekly meeting of this association, held on March 5, Mr. E. Hammond, gardener at Widford Lodge, read a paper on "Spring Bedding." The paper furnished a list of suitable plants for simultaneous flowering, and for choice effects of colouring. *W. C. S.*

LIVERPOOL HORTICULTURAL.—The fourth and last of a series of lectures delivered to the members of this society was held on Saturday, 3rd inst., Mr. Mercer occupying the chair. The lecture, entitled "Ancient and Modern Gardens," illustrated by a number of lantern slides, was delivered by Mr. Barnes, gardener to the Duke of Westminster, Eaton Hall. The paper dealt with some of the most interesting gardens in the country, and compared the styles of flower beds adopted in those gardens. *J. P.*

THE WEATHER.

GENERAL OBSERVATIONS.

The Following Summary Record of the weather throughout the British Islands, for the week ending March 3, is furnished from the Meteorological Office:—

The *weather* was of a variable type; more or less rain, sleet, or snow fell on most days, but there were frequent intervals during which the sun shone brightly. Thunder was heard at Swarraton on Monday morning.

The *temperature* was below the average generally—as much as 3° in the north and east of Scotland, but just equal to the normal in England E. and slightly above it in England S. and S.W. and the Channel Islands. The highest of the maxima occurred on varying dates, and ranged from 55° in the south and south-west of England and the south of Ireland to 48° in the west and north of Scotland. The absolute minima, which were mostly registered either at the beginning or end of the period, were as low as 18° in Scotland E. (at Balmoral), but elsewhere varied from 22° in the Midland Counties and 23° in Scotland N. to 28° in Ireland and to 36° in the Channel Islands.

The *rainfall* somewhat exceeded the average in most districts, but was less in Scotland E., England S. and Ireland S., and about equal to in England E. and Scotland W.

The *bright sunshine* differed little from the average, the aggregate number of hours being only slightly higher or lower than the normal. The percentage of the possible duration ranged from 35 in Scotland E. and England S., and 33 in Ireland N. to 27 in the Midland Counties and England N.W., and to 22 in Scotland N.

THE WEATHER IN WEST HERTS.

May weather in March. During the past week the day temperatures were all above the average, but on one night the exposed thermometer registered 13° of frost. On the two warmest days the temperature in the thermometer screen rose to 64°, which is the highest reading as yet recorded here so early in the spring, and on the warmest night the exposed thermometer did not fall lower than 41°—a high night temperature for the time of year. The ground has now become warm, and at the present time is about 2° warmer at 2 feet deep, and 5° warmer at 1 foot deep than is seasonable. There has been virtually no rain during the past week; the percolation through both the soil gauges is now rapidly declining. The sun shone on an average for nearly 4½ hours a day, or for about an hour a day longer than is usual at this season. On two days no sunshine at all was recorded, but, on the other hand, on three days the record exceeded 7½ hours a day. The wind was, as a rule, of about moderate strength, and came principally from some point between south and west. The mean amount of moisture in the air at 3 p.m. was 3 per cent. less than a seasonable quantity for that hour. An Early Rivers Peach growing on a south wall in my garden came first into blossom on the 6th, or 17 days earlier than its average date in the previous 20 years, and, with three exceptions, earlier than in any of those years.

February.

Persistently wet and yet exceptionally sunny. Taken as a whole this was a month of about average temperature. On the warmest day the highest reading in the thermometer screen was only 49°, and on the coldest night the exposed thermometer showed only 17° of frost. Both of these extremes are very moderate for February, and more particularly the highest day temperature. Although there were no exceptionally cold nights, on all but three nights during the month the exposed thermometer registered readings below the freezing-point. Rain, hail, snow, or sleet fell on as many as 22 days, or for a greater number than in any previous February, and yet the total measurement, 2½ inches, was less than half an inch in excess of the February average. On one occasion in the middle of the month the ground was covered with snow for a short time to the mean depth of an inch. Nearly the whole of the rainfall came through the percolation gauges. The sun shone, on an average, for nearly three hours a day, or for more than half an hour a day longer than usual. In fact, with four exceptions, this was the sunniest February during the past 20 years. The winds were on the whole rather high, but in the windiest hour the mean velocity reached only eighteen miles —direction W. N. W. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by two per cent.

The Winter.

Exceptionally warm and sunny. This was a warm winter, indeed, there have been only three warmer in the last 20 years. At no time did the thermometer, exposed on the lawn, show more than 17° of frost. The total rainfall exceeded the average by only about half an inch but there was an unusual number of days when rain fell. The record of clear sunshine averaged two hours a day, which is about 20 minutes a day in excess of the mean.

Our Underground Water Supply.

Since the winter half of the drainage year began in October, the total rainfall has been 12½ inches, or about half an inch in defect of the average for the same five months, equivalent to a deficiency in rainfall on each acre in this district of 8,370 gallons. At the same time last year the deficiency amounted to 125,680 gallons. *E. M., Berkhamsted, March 7, 1906.*

MARKETS.

COVENT GARDEN, *March 7.*

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0
— — medium, bunch ...	2 0- 2 6
— short sprays per bunch...	1 0- 1 6
— Sprengeri ...	0 6- 1 0
— tenuissimus ...	0 6- 0 9
Adiantum cuneatum, doz. bun.	6 0- 9 0
Berberis, per bunch	2 6- 3 0
Croton leaves, per bunch	1 0- 1 6
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	2 0- 3 0

	s.d. s.d.
Fern, French, doz. bunches ..	3 0- 4 0
Galax leaves, per doz. bunches...	1 6- 2 0
Hardy foliage (various), per dozen bunches	2 6- 4 0
Ivy-leaves, bronze	1 6- 2 0
— long trails per bundle... ...	1 0- 2 0
— short green, doz. bunches...	2 0- 3 0
Moss, per gross ...	5 0- 6 0
Myrtle, per dozen bunches ..	3 0- 6 0
Tuberoses, per dz. blooms ...	0 4- 0 6
Smilax, p. dz. trails	1 6- 4 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Acacia Drummondi, per dz.	18 0-24 0
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldi, per dozen ...	5 0- 8 0
— larger	12 0-15 0
Araucaria excelsa, per dozen ..	12 0-30 0
Aspidistras, green, per dozen ..	18 0-30 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	9 0-10 0
— tenuissimus per dozen ..	9 0-12 0
Azaleas, each.... ...	2 0- 3 6
Begonia Gloire de Lorraine, doz.	12 0-18 0
— Turnford Hall,	12 0-18 0
Boronia megastigma, per doz.	24 0-30 0
Callas, per dozen ...	6 0- 9 0
Cinerarias, per dz.	8 0-10 0
Clematis, per doz.	8 0- 9 0
— in flower ...	18 0-24 0
Crotons, per dozen	12 0-30 0

	s.d. s.d.
Cocos Weddelliana, per dozen	12 0-30 0
Cyclamen, per doz.	6 0-12 0
— extra quality...	18 0-21 0
Cyperus alternifolius, dozen ...	4 0- 5 0
— laxus, per doz	4 0- 5 0
Deutzias, per doz.	9 0-12 0
Dracænas, per doz.	9 0-24 0
Erica gracilis, doz.	12 0-18 0
— hyemalis ...	12 0-24 0
— melanthera ...	12 0-18 0
— Wilmoreana ...	12 0-18 0
Euonymus, per doz.	4 0- 9 0
Ferns, in thumbs, per 100... ...	7 0-10 0
— in 48's, per doz.	4 0-10 0
in 32's, per doz	10 0-18 0
Ficus elastica, per dozen	9 0-18 0
— repens, per doz.	5 0- 8 0
Genistas, per doz.	8 0-10 0
Hyacinths (3 in pot), per doz. ...	6 0- 9 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen ...	12 0-21 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, English, per bush ...	6 0- 9 0
— Californian Newtown Pippin, per barrel	20 0-42 0
per case ...	7 6-18 0
Nova Scotians, per barrel:	
— Starks	22 0-24 0
— Spys ...	24 0-25 0
Fallawaters ..	23 0-26 0
Wagners ...	18 0-19 0
— Russets ..	23 0-26 0
— Baldwins ...	21 0-23 0
— Ribston Pippin	19 0 —
— Blenheim Pip'n	18 6-21 0
— Greening ...	23 0-24 0
— King of Tompkin's County ...	25 0 —
Canadian, per barrel:	
New York Imperials	25 0-28 0
— Russets ...	18 0-30 0
— Greening ...	20 0-25 0
— Baldwins ...	18 0-22 0
Bananas, bunch ...	
— No. 1 quality...	6 6- 7 0
— No. 2 quality...	5 0- 5 6
— Extra quality...	9 6 —
— Grande, per bunch	12 0-14 0
— Jamaica ...	4 6- 6 0
— Loose, per doz. ..	0 8- 1 0
Cranberries, case...	13 0-14 0
Custard Apples .	3 0- 6 0
Dates, Tunis, per lb. .	0 4 —
— Egyptian, cwt.	19 6
Grape Fruit, p. box	22 0-24 0
Grapes, Alicante, per lb. .	1 6- 3 0
— Gros Colmar, per lb.	1 6- 3 0
— (Cape), small cases ...	5 0 —
— large cases	10 0 —

	s.d. s.d.
Grapes, Almeria, per barrel ...	18 0-35 0
Lychees, per box...	0 10- 1 0
Lemons:	
Messina, case	8 0-15 0
Mangos, doz	2 0- 4 0
Nectarines (Cape), per box	7 0-10 0
Nuts, Cobnuts, per doz. lb. . ..	7 6 —
— Brazils, new, per cwt. ...	50 0
— Spanish, p. bag	42 0-45 0
Barcelona, per bag . .	24 6 —
— Almonds, p. cwt	36 0 —
— Monkey Nuts, per bag ..	18 0 —
— Walnuts, dried, cwt.	35 0 —
— Chestnuts, Italian per bag ...	13 6-15 0
— Cocoanuts, 100	8 6-16 0
Oranges, Valentia, per case ..	12 6 —
— Seville, p. box (2 0)	7 0- 7 6
— Navel	14 6-15 6
— Jaffa	9 6-10 6
— Jamaica .	10 0
— Blood	9 0-11 0
— Mandarines, per box (25) ..	0 10- 1 0
,, (50) ...	1 0- 1 2
,, (96) ..	3 9 —
— Palermo, per 100	3 0 —
Peaches (Cape) .	5 0- 9 0
Pears (Cape), per box . .	1 6- 5 0
— Californian, box	5 0-10 0
— stewing varieties, per ½ bush.	2 6- 3 0
— stewing, crate	10 6 —
Pineapples, each ...	2 6- 6 6
Plums (Cape), per box .	3 0- 6 0
Strawberries, lb. .	6 0-12 0

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Anemones (pink) doz. bunches	2 0	4 0
— fulgens	2 6	3 0
— cardinalis	3 0	4 0
Azalea indica., per doz. bunches	4 0	5 0
Azalea mollis, bun.	1 0	1 6
Calla æthiopica, per dozen	1 6	4 0
Camellias, doz.	1 6	2 0
Carnations, per dozen blooms, best American various	3 0	5 0
— smaller do.	1 6	3 0
Cattleyas, per doz. blooms	9 0	12 0
Chrysanthemums, per doz. best blooms	1 6	2 6
— small blooms, per doz. bchs.	10 0	12 0
Cœlogyne cristata, per dz. blooms	1 6	2 0
Cypripediums, per doz.	2 0	2 6
Dendrobium Wardianum and nobile, per doz. blooms	2 0	3 0
Eucharis grandiflora, per doz. blooms	2 6	3 0
Euphorbia jacquiniæflora, per doz. sprays	4 0	6 0
Freesias, per doz. bunches	2 0	3 0
Gardenias, per doz. blooms	3 0	5 0
Hyacinth, dozen bunches	4 0	8 0
Lilac, per bunch	3 0	4 0
Lilium auratum	2 6	3 0
— lancifolium, rubrum and album	2 0	3 0
— longiflorum	3 0	5 0
Lily of the Valley, p. doz. bunches	6 0	9 0
— extra quality	9 0	12 0
Marguerites, white, p. doz. bunches	2 0	3 0
— yellow, dz. bun.	2 0	3 0
"Mimosa," dz. bun.	6 0	9 0
Mignonette, dozen bunches	3 0	4 0
Narcissus, "Paper White," doz. bunches	1 6	2 6

	s.d.	s.d.
— Narcissus, Soleil d'Or	1 6	2 0
— Golden Spur, per doz. bnchs.	4 0	5 0
— Horsfieldi	4 0	6 0
— Incomparabilis varieties	3 0	5 0
— Ornatus	2 0	3 0
— Princeps	2 6	4 0
— Sir Watkin, per doz. bunches	5 0	6 0
— Telemonius, plenus, per doz. bunches	3 0	5 0
Odontoglossum crispum, per dozen blooms	2 6	3 0
— grande, per dozen blooms	4 0	5 0
Ornithogalum (Star of Bethlehem) per doz. bchs.	1 6	2 0
Pancratiums, doz.	3 0	5 0
Pelargoniums, show, doz. bun.	4 0	6 0
— Zonal, double scarlet	6 0	9 0
Primula, double white, per doz. bunches	5 0	6 0
Ranunculus, doz. bunches	9 0	12 0
Roses, 12 blooms, Niphetos	2 0	4 0
— Bridesmaid	3 0	6 0
— Kaiserin A. Victoria	3 0	5 0
— Caroline Testout	4 0	6 0
— C. Mermet	6 0	9 0
— General Jacqueminot	2 6	4 0
— Liberty	4 0	6 0
— Mad. Chatenay	4 0	8 0
— Mrs. J. Laing	4 0	6 0
Stephanotis, per dozen trusses	4 0	6 0
Stocks (double white) per doz. bunches	2 0	3 0
Sweet Peas, per doz. bunches	3 0	5 0
Tulips, per dozen bunches	5 0	9 0
— special quality	15 0	18 0
Violets, 12 bunches	1 0	2 0
— special qual.	2 0	3 0
— Parma, French, large bunches	2 0	4 0

Vegetables : Average Wholesale Prices.

	s.d.	s.d.
Artichokes, Green French, p. doz.	2 6	3 0
— Ground, ½ bush.	1 3	—
Asparagus, per bundle :—		
— Spanish	1 10	—
— Paris Green	4 6	5 6
— Sprue	0 10	—
Beans, French, p. lb.	0 6½	0 7
— Broad, per pkt.	0 6	
— Flageolet, box	0 10	—
— Home grown, per lb	1 3	1 4
— Channel Island	1 3	1 4
— Madeira, bask.	2 6	3 0
— Niggers	5 0	—
Beetroot, bushel	1 3	1 6
Broccoli, per doz.	1 6	2 0
Cabbages, per tally	2 6	3 6
— red, per bushel	2 0	
Chow Chow, per dozen	1 6	2 0
Carrots, French pad	2 6	—
— cwt., unwashed	1 3	1 6
— bag, washed	2 0	2 6
Chicory, per lb.	0 2½	0 3
Cauliflowers, doz.	2 0	—
— Italian Heads, per basket	2 0	2 6
Celery, p. doz. bdls.	6 0	12 0
Celeriac, per doz.	2 6	—
Cucumbers, dozen	4 0	6 0
Endive, per dozen	1 9	2 0
Horseradish, foreign, per dozen bundles	10 0	12 0
Kale, Scotch, bush.	0 9	1 0
Leeks, 12 bundle	2 0	—
Lettuces, French, per doz.	1 0	1 3
Mint, per dozen	4 0	6 0
Mushrooms (house) per lb.	0 9	1 0

	s.d.	s.d.
Mushrooms, Buttons, per lb.	0 10	—
Mustard and Cress, per dozen pun.	1 0	1 6
Onions, Valencia, per case	7 0	8 0
— Dutch, bag	3 0	3 9
— pickling, per bushel	2 0	2 6
— French, ½ bag	2 3	—
— Spring, dozen bunches	2 0	3 0
Parsley, 12 bunches	2 0	3 0
Parsnips, per bag	2 0	2 6
Peas (French flats)	5 0	5 6
— per packet	0 6	0 7
Potatos (new) :—		
Canary, cwt.	10 0	14 0
— French (new), per lb	0 2½	0 4
— Channel Island Kidneys	0 4	0 5
— Algerian, cwt.	18 0	–
— ,, barrel	20 0	–
Radishes, French breakfast, p. dz.	1 3	1 8
Rhubarb, per doz.	1 0	1 2
Salsafy, p. dz. bdls.	4 0	—
Savoys, per tally	5 0	7 0
Spinach, French crate	3 6	5 0
Sprouts, ½ bushel	1 6	—
Sea Kale, p. punnet	1 0	1 3
Spinach (French), pad	4 0	5 3
Tomatos :—		
— foreign, bundle of 4 boxes	10 0	12 0
Turnips, per doz. bun.	1 6	2 0
— bags	2 0	3 0
Turnip Tops, bush.	1 0	1 3
Watercress, per doz. bunches	0 6	—

Remarks.—The last consignment of Peaches from the Cape was of poor quality, the fruits being colourless and unripe, consequently they met with no great demand. Grapes from the Cape are arriving in good condition, and meet with a ready sale. A consignment of Asparagus from Spain met with a good demand, in fact, Asparagus from all sources is selling well. English and Channel Islands Beans are much cheaper. Trade in fruit and vegetables has much improved owing to the prevalence of exceptionally fine weather. *E. H. Rides, Covent Garden, March 3.*

Potatos.

Blacklands, 55s. to 60s. ; Bedfords, 65s. to 75s. ; Lincolns, 45s. to 60s. ; Kents, 70s. to 80s. ; Dunbars, 80s. to 95s. per ton. —*John Bath, 32 and 31, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

The trade in plants is still very quiet, and growers of imported Azaleas and Dutch bulbous plants can scarcely be receiving returns sufficient to pay for the cost of the stock. Azalea indica in all the best varieties continues over plentiful. On Saturday last plants which usually cost fully £5 per 100 in Belgium were being sold in the London streets at 1s. each. Hyacinths are also sold for equally low prices. Spiræas are now plentiful and well developed. Well-flowered Genistas are sent by several growers, and are cheaper. Cinerarias are good ; the flowers of the type grown for market are not of the most perfect form, but they are bright, while the habit of the plants is all that can be desired. Cyclamen are remarkably good, but returns are low. Good Begonias are not over plentiful. Marguerites are very good in quality, but these plants are not in great demand. Erica Wilmoreana is moderately good. E. gracilis vernalis can be had in dwarf, bushy, well-flowered plants. A few E. hyemalis are still coming in the market. Also E. melanthera in tall pyramidal plants. Dendrobium Wardianum is noticed in well-flowered plants, but there seems little demand for them. There is little variation in the trade and supply of Ferns, Palms, and other foliage plants, but with the mild weather there is an increased trade among hardy flower roots. Pansies in flower sell readily. Polyanthus, Primroses, and Daisies, with a few flowers open, are also in demand.

Cut Flowers.

I have never heard more grumbling among the salesmen than I did when going round the market this morning. The very large supplies of foreign flowers materially affect the sale of English grown specimens. Roses are now coming from all the usual sources, and fine blooms on long stems of the varieties Mrs. J. Laing, Caroline Testout, and others are now more plentiful ; indeed many were left unsold at closing time this morning. Supplies of Carnations are excessive, and returns have fallen considerably. Lilium auratum of good quality are now seen. L. longiflorums are cheaper. L. lancifolium vary considerably ; many blooms are of poor quality, but the best make good figures. Eucharis are not quite so numerous. Azalea Fielderi is over plentiful. Callas are good and cheap. Tulips continue over plentiful ; some very fine double varieties of these flowers are seen, and these make better prices than the "singles." Daffodils in best varieties from English growers, and the large quantities from the Scilly Islands and Guernsey, considerably exceed all demands. Lily of the Valley with good green foliage can be had in plenty. Taking the market all round supplies are exceedingly good, but meet with a very slow trade. *A. H., Covent Garden Market, March 7, 1906.*

PLANT PORTRAITS.

Apple, Cox's Orange Pippin. *Garden Album*, t. 6.

Berberis Darwinii.—*Garden Album*, t. 7.

Bougainvillea glabra var. Sanderiana. *Garden Album*, t. 8.

Cypripedium Alcibiades var. magnifica. *Garden Album*, p. 28.

Epiphyllum delicatum.—*Revue de l'Horticulture Belge*, March. See *Gardeners' Chronicle*, December 6, 1902, p. 411.

Odontoglossum ardentissimum var. Theodora.—*Garden Album*, p. 27.

Meconopsis integrifolia.—*Garden Album*, tab. 5. See also Supplement to the *Gardeners' Chronicle*, October 1, 1904.

Rehmannia angulata.—*Garden Album*, p. 19. See also Supplement to the *Gardeners' Chronicle*, May 9, 1903.

ANSWERS TO CORRESPONDENTS.

Apple Trees on Chalk : *C. N. M.* We have seen Apple trees planted on chalk, but these have never been satisfactory. The growth is stunted and the produce very poor compared with the fruits that are cultivated on more suitable land. Much can be done, however, to improve the top spit of even chalky soil by heavily manuring it and by top dressing with dung, affording copious supplies of water, and pricking over the surface of the ground once each year with a fork so as to encourage the roots to the surface. If you give each tree a good start at the time of planting by surrounding it with fresh, turfy loam, and afterwards treat the ground as already mentioned, you may obtain moderately good results. The following varieties are amongst the best for cultivation on the paradise stock :—Dessert : Mr. Gladstone, Beauty of Bath, Benn's Red*, Lady Sudeley, Worcester Pearmain*, James Grieve, Gravenstein, Wealthy*, Cox's Orange Pippin, Allington Pippin, Mother*, Cockle Pippin, Adams Pearmain, Blenheim Pippin, Mrs. Phillimore*, Claygate Pearmain*, Beauty of Kent, Lord Burghley, and King's Acre Pippin. Cooking : Lord Grosvenor, Ecklinville Seedling, Lord Derby, Warner's King, Lane's Prince Albert, Newton Wonder, and Bramley's Seedling If we have named too many dessert varieties you may omit those marked with an asterisk.

Grubs : *W. B. S.* The grub you send is the larva of the common cockchafer, and it is very injurious to vegetation.

Names of Fruits : *Noel.* 1, Claygate Pearmain ; 2, Round Winter Nonsuch ; 3, Annie Elizabeth ; 4, Gascoyne's Scarlet Seedling.

Names of Plants : *F. T. Bourton.* 1, Pinus, probably ponderosa ; 2, 3, 4, 6, all dwarf forms of Picea excelsa (such as ericoides, Clanbrassiliana, &c.) ; 5, probably Picea orientalis. —*F. F.* Galax aphylla.—*A. J. C.* Garrya elliptica.—*F. S.* 1, an Evergreen Oak of which we will give you the true name next week ; 2, Juniperus sinensis ; 3, Azara integrifolia.—*Rex.* We do not undertake to name varieties of Roses ; send to some Rose grower who will probably have them in his collection. The other specimen is a Viburnum, probably V. Sandankwa as far as we can tell without flowers. —*Babul.* Acacia Farnesiana.—*W. L.* 1, Cymbidium eburneum, it varies in the character of the purple spotting on the lip ; 2, Stauropsis gigantea, often called Vanda gigantea.—*C. S.* Rhododendron Veitchii and Adiantum peruvianum.—*A. E. B.* 1, send when in flower ; 2, Ruscus Hypophyllum ; 3, Cornus Mas ; 4, Elæagnus pungens variegata ; 5, Andromeda floribunda ; 6, Genista next week.

Peaches : *H. W.* The branches are attacked by a Botrytis. Keep the house as well ventilated as possible without causing injury to the trees. Spray with potassium sulphide, one ounce to three gallons of water.

Pyrus japonica injured : *A. G. S.* Probably the effect of frost on the young growth. Cut the shrubs hard back. As they get established they will become more hardy.

Rose Mildew : *H. G. K.* The shoots are covered with the spawn of a Rose mildew which has killed the bark. You can do nothing but cut away and burn the affected shoots and spray the healthy ones with liver of sulphur dissolved in water in the proportion of 1 oz. of the sulphur to 2 gallons of water.

Superphosphate of Lime : *J. T. and S.* A very light dressing of this manure would not be injurious to freshly-planted Carnations provided none is thrown over the leaves, which are liable to be burned if so treated. At the same time, and assuming that the ground was properly prepared before planting was done, such manure is not yet required. Superphosphate may be applied later on if it is thought to be desirable, especially if lime and phosphates are somewhat lacking in the soil, but its application will not kill the wireworms.

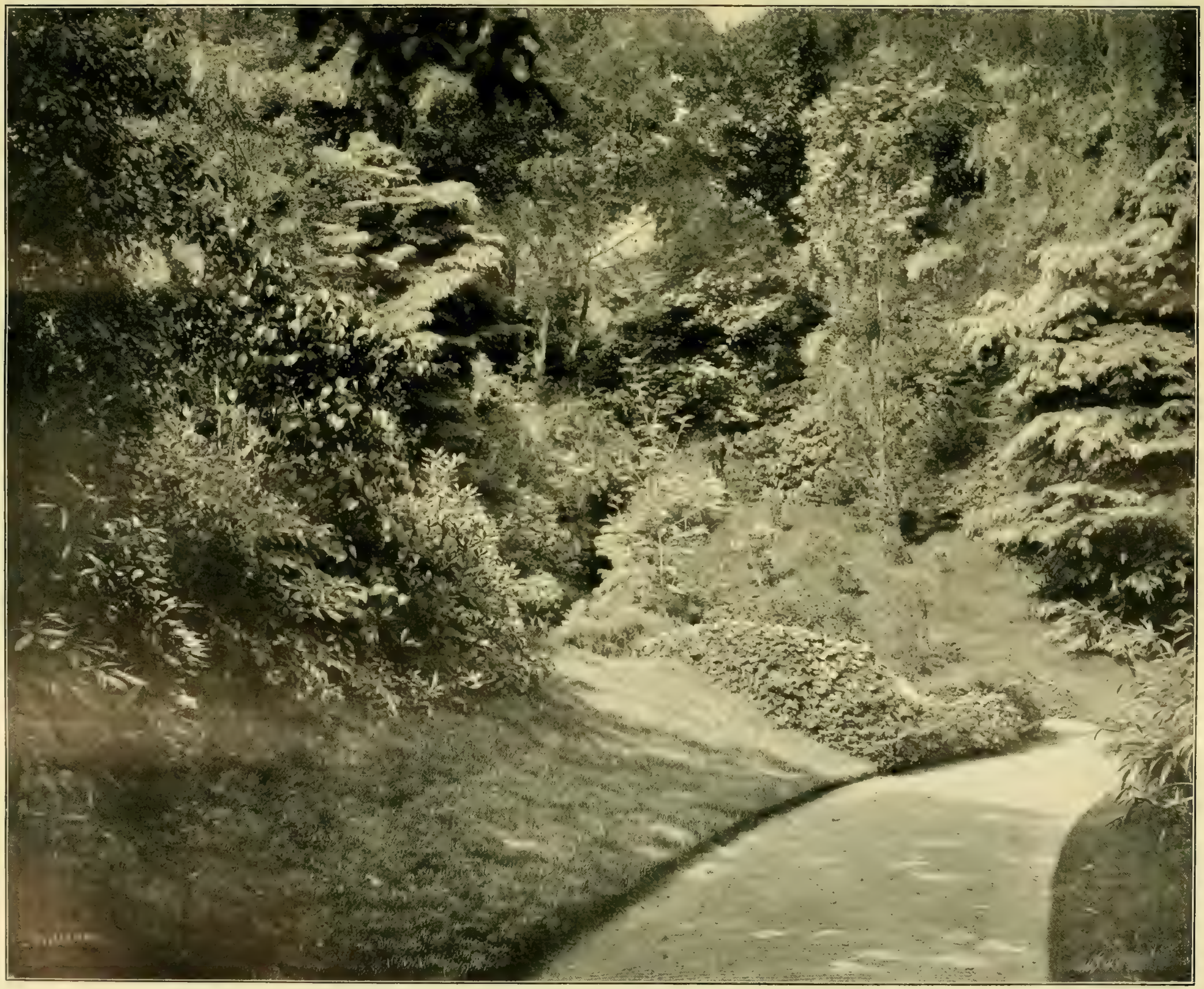
Temperatures in Plant Culture : *C. E.* The various temperatures mentioned in the Calendar for "Plants Under Glass," which appeared in the issue for January 6, included the rise by day caused by sunshine. The maximums then given for each house should not be exceeded at present. As the growing season advances you may quite safely increase each week very slightly the degree of atmospheric temperatures at night, and also by day, till the maximum summer temperatures are reached. The maximum day temperature should be maintained until sunset, and from this point the atmosphere should very gradually become cooler until the minimum is reached. Guard strictly against high temperatures during the night. The atmospheric temperature of the stove during the summer months should range from 70° to 80°, that of the intermediate house from 65° to 70°, and of the conservatory from 60° to 68°, allowing a rise by sunshine of from 5° to 10° in each house, and making use of the blinds and ventilators to regulate the warmth of the atmosphere in the houses as much as possible. If a varied collection of plants is grown in the stove the temperature even now may be allowed to run up to 80° with sun-heat when closing the house. If Ixoras, Dipladenias, and Codiæums are the principal inmates 10° to 15° more heat will be an advantage.

Vines : *J. G.* We can form no definite opinion from the specimens you send. As the disease progresses send us further shoots.

Violets Diseased : *J. J. S.* Yes, it is the same disease as that described on p. 80 in answer to *W. B.*

Weed Killer : *H. O. F.* Most weed killers are very poisonous. If you want something that is not so poisonous you had better apply common salt which is effective, and if not sprinkled on Box or other living edge plant will do no injury.

Communications Received.—H. S.—G. D.—D. R. W.—H. H. S.—G. H. W.—G. M.—Irish Gardening—A. G.—J. D., much obliged, no vacancy—Gauntlett—Redruth—W. C. G. L.—V. H. L.—R. L. C.—L. L.—T. C.—G. S.—L. G., Brussels (Your letter shall be forwarded to the Society).—J. K. Budde, Utrecht—C. W. S.—C. S. & Co.—M. B., Middelburg (Sorry we have not the description you require)—A. H. W.—E. M.—W. H. C.—F. W. G.—H. W.—T. A. S.—S. W. P.—D. R. W.—S. C.—F. L.—F. W. P.—W. S. E. C.—Reader—H. H. Smith—A. P. B.—R. A.—Anxious—M. M. N.—G. W.—G. T.



From a Photograph by Mr Ralph, Dersingham.

VIEW IN THE "DELL," ROYAL GARDENS, SANDRINGHAM, ILLUSTRATED BY SPECIAL PERMISSION OF H.M. THE KING.

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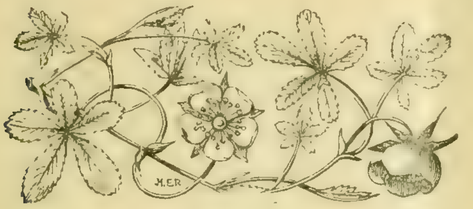

THE
Gardeners' Chronicle
No. 1,003.—SATURDAY, March 17, 1906.

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GARDENING FOR THE PEOPLE.

IT is generally admitted that one means of counteracting the townward trend of the countryman and his family is to endeavour to induce him to retrace his steps, if that be possible, and take up rural occupations of various sorts. Amongst those that hold out the greatest amount of promise for him and his is the congenial matter of vegetable and fruit cultivation on small holdings. Not everyone has the necessary knowledge and skill, still there are various agencies at hand, ready and desirous of affording the one and teaching the other. Then there comes the important question, "What shall he cultivate ?" A mere glance at the list of imported products, published in the Government Reports, and often copied into this and other journals, seems to indicate numerous vegetables and fruits which can be grown in this country equally well as regards size, appearance and quality as the imported productions with which many of our towns are now supplied. Our own growers living on the spot, or within a comparatively short distance, can surely undersell the vendor of imported stuff, handicapped as is the latter by transit costs by sea and land, and the middleman's charges, these, of course, being reckoned in to the retail customer. Is there any need for a native of this country to buy his first Blackcurrants from the Dutch grower, or his unripe Gooseberries for tarts and puddings from the same source, these growing just as well and just as abundantly on our own soil, and as early, if not more so, in the warmer counties?

How many cottage walls are simply wasted ? Few persons seem to realise the potential wealth in these warm surfaces when utilised for cultivating the choicer varieties of Pears, Figs, Grapes, as the Black Cluster, the Parsley leaved, and other Sweetwater varieties—all things easy to grow and make productive. How few persons in the small towns and villages know of the flavour and lusciousness of the Nectarine, Peach, and Apricot, and yet these fruit trees are not more difficult to prune and train than a Gloire de Dijon Rose. Moreover, the trees are sold at prices from 2s. 6d. to 5s. by the nurseryman. It is cause for wonder that the "trade" do not press the cultivation of the finest kinds of fruits on their neighbours possessing small gardens and available walls; the warmer aspects for those already named, and the colder ones for May Duke, Morello, and Belle Magnifique Cherries, all good bottling fruits, and for cooking purposes. The peripatetic County Council lecturers might do worse than teach country girls, as well as men, how to prune, nail, and tie fruit trees. They are now taught to cook in many of the schools, why should they not be taught how some of the things that they use in the cookery classes are cultivated? Red and white Currants, Gooseberries for gathering in the green state, and also ripe, should receive attention from small holders. Raspberries are a paying crop everywhere in this country, either as a dessert fruit, gathered adhering to the stalk, or detached if for preserving as jam, and making Raspberry vinegar, a commodity which even in the country districts is not readily to be obtained at a moderate price. The Apricot ripens its fruit in most parts of England and southern Scotland, but singularly its cultivation is not so widely spread as it should be, at the least in gardens other than those of the gentry. Even in far away Northumberland, certain varieties, such as the Moorpark, and the early form of it; the Royal, a rich, juicy, and hardy variety, and Hemskerk succeed on south aspects, fruiting freely if some kind of light protection against the sun's rays be afforded early in February. Failing this screen the blossoms open very early and often get destroyed by frost. The most appropriate covering is that afforded by the flat branches of Balm of Gilead or common Spruce Fir, tacked sparingly to the wall, their needles falling off as the sunshine increases with the season, until, at the period when the fruits are of the size of Horsebeans, the Fir branches are almost bare. The Apricot affords the best return in soils abounding in lime, as in the counties of Sussex, Surrey, Kent, Berks, Oxford, Wilts. In those soils that are poor in lime it can be readily afforded in the form of lime rubble and old plaster, and mixed intimately with the staple or in the compost in which the trees are planted.

Many persons with available walls facing to the south, west, east, and even north, may elect to cultivate Pears, good fruits of which are not too common in country places, and if these are worked on the Quince, on which stock many varieties produce good crops, the holder will not have long to wait for returns from his venture. He will be wise if his selection consists of early and midseason varieties, these ripening on the trees or soon after being gathered. In most parts these ripen on bushes as well as on wall trees. The following names are given in the order of ripening; Citron des Carmes, for July; Jargonelle, a large, favourite Pear, good on Pear or Quince stock; Beurré Giffard, Clapp's Favourite, a handsome Pear of great excellence, for August; Williams' Bon Chretien, a well-known variety, highly perfumed and melting; Buerré d'Amanlis, a capital variety for a wall, large and melting; B. Superfin, a delicious melting Pear; and Autumn Nelis, for September. For cultivation by those having storage room, the following may be recommended: Louise Bonne of Jersey, Jersey Gratioli, Fondante d'Automne, Beurré Hardy, B. d'Aremberg, Brown Beurré, Doyenné Boussoch, Marie Louise, one of the best; Comte de Lamy, Beurré Bosc, Baronne de Melo, Glout Morceau, Doyenné du Comice, Beurré d'Anjou, Winter Nelis, Nouvelle Fulvie, Easter Beurré, and Beurré Rance, are good late ripening Pears. The list might be greatly increased, but it is sufficiently lengthy for our purpose, and not many first-class varieties have been omitted. Baking and stewing Pears should be grown generally by cottagers, for, besides being palatable additions to their winter fare, the fruits are always saleable in the towns. Of these may be mentioned Catillac, Summer Compote, Uvedale's St. Germains, and Winter Orange. A farming man, woodman, or general labourer renting on lease an acre or two of land of fairly good quality, by working on odd days when his employer did not need his services, and for an hour or two in the evening, with perhaps the assistance of his boys and big girls in doing the lighter sorts of work, would be able to add materially to his income, and increase the comfort and well-being of the family. With crops of Potatos, Parsnips, Carrots, Onions, Leeks, Haricot Beans, Dwarf Peas, Cabbages and Kales, and with a pig or two killed annually and turned into bacon, and several goats to afford milk, and occasionally a kid for the table, the man would be enabled to look with equanimity on his lot during the seasons when employment at his calling was not too regular. He should be encouraged to take up bee-keeping, for honey and bees-wax, always in demand at fair prices, and the propagation of fruit bushes for sale in his neighbourhood should come within the scope of his labours. *Countryman.*

NEW OR NOTEWORTHY PLANTS.

ANTHURIUM FORGETI, N. E. BROWN

(*N. Sp.*).

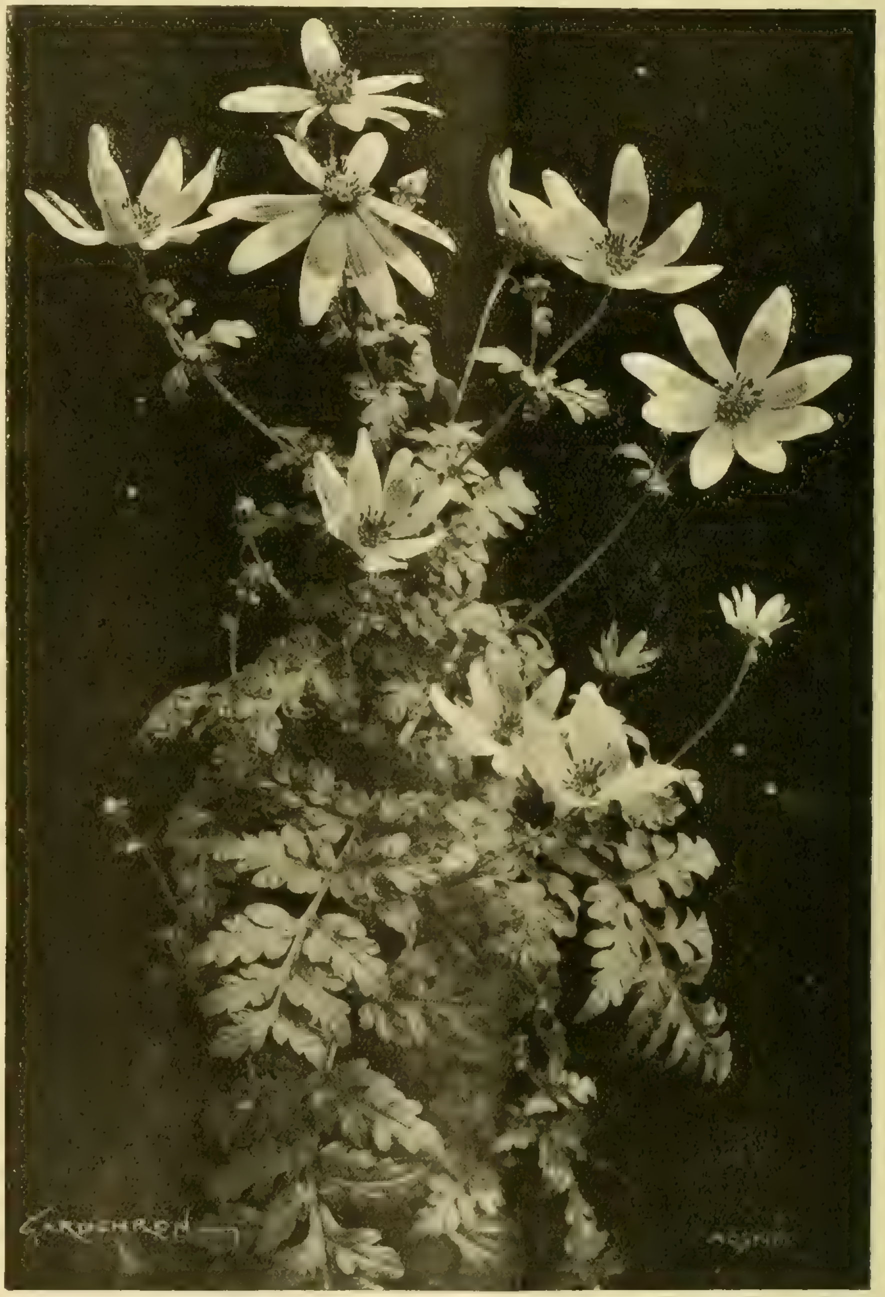
THE novelty now described is a handsome foliage plant allied to the well-known A. crystallinum, but differing first in its much smaller size, since it is stated to attain only to about one quarter of the size of A. crystallinum, and secondly by its constantly peltate, entire leaves, which are of a beautiful rich, deep green, overspread with a velvety sheen, and are exceedingly pleasing to the eye. The veins are also fewer, with a somewhat different curvature, and are less frosted-white than in A. crystallinum. Messrs. Sander & Sons have introduced a large stock of A. Forgeti from Columbia, where it was discovered in the province of Cundinamarca by their collector, Monsieur Forget. They inform me that the plant is quite constant in its peltate, entire leaves, and that they have never observed any approach to a lobing or a sinus at the base of the leaves on any of their plants. The following is a description of this new species.

Stem short, erect, freely rooting, the whole of the plant seen, excluding the peduncle and spadix, being about 15 inches high. Leaves closely placed, glabrous; petiole erect, 6-10 inches long, including the geniculus, which is 5-6 lines long, quite terete, without a groove down the face, sheathing at the base, green; blade drooping, 10-14 inches long, 6-9 inches broad; peltate, elliptic-ovate, shortly acuminate, quite entire and broadly rounded at the base, or but faintly emarginate, not in the least cordate or notched, of a rich and pleasing deep green, overspread with a velvety sheen, with very pale green nerves and primary veins, which often have a frosted-white border; underside pale green, sometimes with a faint purplish hue; primary nerves (including the midrib) 6-7, all radiating from the insertion of the petiole, prominent on the upper side, very slightly so beneath; when there are 6, one is directed straight back in a line with the midrib, forking about an inch from the margin of the leaf into two branches (when there are 7, this backwardly directed nerve is divided to the base into two) which sweep in bold curves out to the margins below the middle of the leaf; the lowest pair are first directed backwards in a widely-spreading manner, then curve forward out to the margin, and become excurrent near the apex of the leaf; the inner pair are widely ascending, spreading at the base, then curve, and form a slightly looped nerve about ¾-1 distant from the margin at the lower half, and becoming excurrent at the apex; the midrib gives out three or four primary veins on each side, which unite and form loops with the inner pair of nerves. Peduncle rising to about twice the height of the leaves, 1½-2 feet long, terete, glabrous, green. Spathe 4-6 inches long, ½-⅔ inch broad, broadly linear or strap-shaped, acuminate, amplexicaul or shortly decurrent at the base, spreading, glabrous, green. Spadix about 6 inches long, ¼ inch thick at the base, terete, gradually tapering to the obtuse apex, ochreous yellow, with a wax-like shining surface. Flowers 4-angled, about 1 line in diameter. Ovary green at the top, two-celled; stigma sessile very small. *N. E. Brown.*

COREOPSIS GRANTII.

A COREOPSIS from tropical Africa, with characters that are likely to recommend it to gardeners, is represented in the illustration at Fig. 64, which has been prepared from a photograph of a plant in the Kew collection, where it flowered for the first time in February. It was raised from seeds collected in Uganda by Mr. M. T. Dawe, who described it as "a good thing." Some plants of it were tried in a border outside last summer, and although they grew freely, they did not flower before the frost killed them. Others that were kept in pots and received the protection of a greenhouse formed compact leafy bushes about 2 feet high, with elegant dark green, bipinnate foliage, and they flowered freely last month. The flowers are about 2 inches in diameter, and of a bright, pleasing shade of yellow. They are not equal in beauty to those of C. grandiflora or C. lanceolata, but the habit of the plant and its winter-flowering character are its recommendations for the garden. We are not yet able to say if it is a perennial.

C. Grantii was discovered in Nile-land by Speke and Grant during their expedition in 1860-3 to the sources of the Nile. According to Mr. Dawe it flowers in December in Uganda. There are dried specimens at Kew of a big-flowered, beautiful species of Coreopsis named speciosa, which was found in Angola by Welwitch, and again quite recently by Sir Evan James in Uganda. It ought to be a good garden plant. Perhaps Mr. Dawe or his assistant can obtain it for us. *W. W.*



[*Photo by E. J. Wallis.*

FIG. 64.—COREOPSIS GRANTII, A NEW SPECIES FROM UGANDA; FLOWERS 2 INCHES IN DIAMETER; COLOUR, YELLOW.

THE LONDON MARKETS AND THEIR SUPPLIES.

(Continued rom page 15.)

COVENT GARDEN.

FEW markets concerned with garden produce possess a fraction of the interest with which Covent Garden is invested, and in many respects it is probably one of the most remarkable in the world. In some features it is surpassed by the great Parisian market, les Halles Centrales, especially in May, when the wonderful supply of Asparagus at the latter is probably unique. But to comprehend the business transacted in the London market, a good deal more than a cursory view or a superficial acquaintance is essential. It is somewhat like the great metropolis it so largely supplies, disappointing to many strangers on a first inspection, and it is only by prolonged experience that an adequate idea can be formed of Britain's greatest city, or of its greatest market.

Since the days when *Punch* stigmatised Covent Garden as "Mud-salad Market," considerable improvements have been effected, and there can be no question that the authorities, namely, the officials who represent the Duke of Bedford, have striven earnestly not only to remove the reproach which long rested upon it from a sanitary point of view, but also to facilitate the inner working. In the former they succeeded; in the latter they have been confronted with enormous difficulties, though many useful regulations have been introduced to aid the object in view. The whole market is cramped by its surroundings, narrow streets, and totally inadequate standing space for sellers and buyers. At busy periods of the year the streets, from the Strand on the south to Long Acre on the north, are packed with vehicles in early morning, and some hours often elapse before they can obtain their supplies. No one but the official porters may remove goods from the market premises to the carts and vans of the retailing fruiterers and greengrocers, and scores of men with heavy head-loads of boxes or baskets can be seen plunging up and down the streets shouting the names of the purchasers they are trying to find. A stranger might imagine that there must be endless confusion with numberless wrong deliveries, and that night would arrive before the buyers could obtain their goods. Yet in a few hours all are cleared away, the streets around the market are hose-washed and cleansed, and the bustle has subsided to the ordinary daily routine. To all quarters of a gigantic city, fruits, flowers, and vegetables for millions of people have been conveyed by a vast array of vehicles ranging from the imposing motor wagons of the leading stores to the humble costermongers' barrows, which supply the multitude in the densest centres of population. It is a wonderful business altogether, and an early morning visit to Covent Garden, especially in the spring and summer months, when the flower market is at its best, affords one of the most interesting of London's characteristic spectacles.

As a depot or mart for the highest quality fruit, vegetables, and flowers, Covent Garden stands unrivalled, and it is the reputation in this respect which brings so many sellers and buyers together within its narrow limits. For the best produce substantial prices are almost always obtainable, for fashionable novelties, or for anything of exceptional merit, prices which appear fabulous are secured. When Laxton's Royal Sovereign Strawberry was under trial before it had reached the public, a small consignment of fruits from the open ground was sent as samples to a Covent Garden salesman. The receipt was acknowledged by a telegram, requesting an immediate supply of as large a quantity as possible for a special function at 10s. per lb. The yield of a small plot of outdoor plants at this rate was sufficient to buy the land many times over. That is only one example, and though the days are long past when choice Grapes were sold at 15s. to 20s. per lb., Pineapples at 21s. each, and Pears at 10s. 6d. each, astonishing prices are still often obtained for special products extra early, or of unusual quality.

Of course, the market is subject to the same disadvantages as all others, occasional periods of "glut," usually following those when good prices have ruled, and then even high quality goods have to share in the depression of value. But it is rare that the market is overstocked with first-class produce during the time the London season lasts—mainly the spring months up to June or July. The principal cause of rapid falls in prices is excessive supplies of second or third-rate samples, or, in the case of fruits, those which are indifferently packed, or not efficiently graded. Growers cannot make a greater mistake than to send such produce to Covent Garden; there are other centres where the demand is considerable for low-priced fruit and vegetables, and we have known many cases where the prices realised for such grades have been materially better at Stratford, Spitalfields, or the Borough, than for the same quality at Covent Garden. The leading salesmen do not want to be troubled with goods which their regular customers will not buy at any price, and we have known whole consignments transferred to costermongers at the end of the market for prices which did not pay the carriage to London when the salesman had deducted his charges. An amateur grower, or some inexperienced person, then writes a letter to the daily papers, and cites his case as an example of the impossibility of making land cultivation pay.

We are acquainted with growers and retailers who have tried all the London markets, but who in the course of 40 or 50 years' experience have found Covent Garden invariably superior in all respects. But then the former are cultivators who do not believe in wasting time, space, and money over inferior produce; nothing short of the best results the most skilful cultivation can produce will satisfy them. The buyers at Covent Garden are those who have to provide wealthy and exacting customers with the highest quality procurable. For those two classes Covent Garden is an ideal market, and if the inferior produce which is not required there could only be excluded, the congestion, which is commonly a most distressing feature during the hours of business, would be considerably diminished. *R. Lewis Castle.*

(To be continued.)

ODONTOGLOSSUM × FOWLERIANUM.

At the meeting of the Royal Horticultural Society, held on the 6th inst., much interest was excited by the hybrid Orchid illustrated at fig. 65. The flowers were attractive by reason of their unusually rich colouring, for, as will be seen, the petals and sepals are very narrow, and in form, therefore, the flowers are not equal to many others. But the dense spotting of dark purple, and the rosy purple colour on the tips and margins of petals and sepals are in every respect noteworthy. The long blade of the lip is also of rosy purple colour, but the base and callus are yellow. The hybrid is from a cross between O. Rossi rubescens and O. cirrosum, and it was shown by Messrs. F. Sander & Sons.

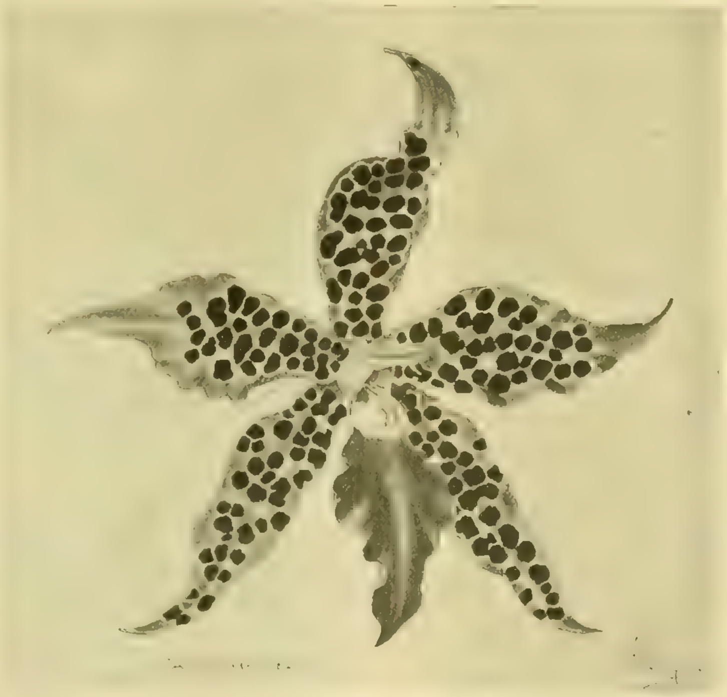


Fig. 65.—Odontoglossum Fowlerianum; flowers spotted with dark purple colour, and having the sepals and petals tipped and margined with rose purple.

ORCHID NOTES AND GLEANINGS.

DENDROBIUMS AT WOODHATCH.

A visit to Woodhatch, Reigate, the residence of Mrs. Haywood, at any time of the year is interesting. There is always something for the studious to learn, and something delightful to observe. The chief feature at the present time are the Dendrobiums, which are uncommonly well cultivated and exceedingly floriferous. The collection is remarkable for the vigorous, well developed plants of some of the most beautiful hybrids in cultivation. Imagine a rather lofty house, with a lean-to roof facing to the south and more than 60 feet in length, the back stage between 5 feet and 6 feet wide, upon which are arranged about sixty specimen plants covered with bloom, and a general idea will be had of the beautiful floral scene there is now at Woodhatch. The front stage also contains a large number of smaller plants in bloom, which comprise for the most part the newer and rarer varieties. The larger plants on the back stage average from 2 feet to 4½ feet in height from the rim of the pots, and have from 5 to 12 flowering growths, some of which carry from 40 to 50 flowers each, many of the pseudo-bulbs producing a mass of bloom extending over 2 feet in length. A specimen of D. Virgil, which was raised here, has between 400 and 500 flowers, and is an indication of what may be done by good culture. D. Edithæ superbum, D. Cybele nobilior, D. Ainsworthii picturatum, D. splendidissimum grandiflorum, D. nobile nobilius, D. Euryalus var. Apollo grandiflorum, etc., also form masses of bloom. D. splendidissimum var. Mrs. Haywood is conspicuous and attractive, its flowers being of large size and heavily marked with purple-lilac colour, with a dark maroon blotch on the lip. D. Ainsworthii Woodhatch variety is also very fine. The collection comprises nearly all of the best varieties of the D. melanodiscus crosses, including the new hybrids raised by Mr. Salter as D. m. Salteri, D. m. gloriosum, D. m. Sunray, D. m. giganteum, also the Burford hybrids as D. Luna, D. pallens, D. Rainbow, D. Juno, etc. The last-named variety as a rule is not a profuse bloomer; the flowering nodes oftentimes produce young plants instead of bloom, but here there are plants carrying over a score of richly-coloured flowers. All of the varieties enumerated are in bloom, together with such well-known hybrids as D. Schneiderianum, the sweet-scented D. endocharis, D. Ainsworthii, D. Cassiope, D. Wiganiæ; also some fine varieties of D. nobile as Ballianum, Amesiæ, and others. Suspended from the roof is a pretty plant of the old D. crepidatum, with 5 pendulous growths all laden with white and yellow flowers. A fine plant of D. fimbriatum is also in bloom, one of the racemes producing two lateral branches with several flowers on each. This charming display of bloom is well worthy of the inspection of anyone having a love for beautiful flowers, and especially by those who have an interest in Dendrobiums and their culture. *W. H. White, Burford, March .*

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDEES."

The issue of this publication for January, 1906, is the first of the eighth series, and eight of the subjects illustrated and described are well-known species; the other five are hybrids.

Barkeria spectabilis commences the genus Barkeria, which is kept distinct from Epidendrum, under which it is generally included. A pretty cool-house species, with white flowers tinged with rose and spotted with purple on the lip and column. Native of Mexico and Guatemala. The plant illustrated was imported by MM. J. Van de Putte, of Ledeberg, Ghent.

Cattleya Marie Henriette de Wavrin (Rex × Loddigesii).—Raised by M. De Geeste in the gardens of the Marquis De Wavrin. Flowers blush-white, with yellow and purple front to the lip, which is veined as in Cattleya Rex. It was given an Award of Merit at the Royal Horticultural Society, October 24, 1905.

Cattleya triumphans, var. Ch. Maron.—The original, from a cross between C. Dowiana aurea and C. Rex, flowered with Messrs. Sander in 1904; the variety illustrated, with M. Ch. Maron, Brunoy, France. Flowers yellow, and much resembling C. D. aurea, but with reddish-crimson lip bearing numerous yellowish lines and veining as seen in C. Rex.

Cymbidium sinense.—One of the oldest species. Inflorescence erect, flowers purplish-brown with yellow front to the lip.

Cypripedium Fairrieanum.—A pretty variety flowered by M. Ginot, St. Etienne, Loire (gr. J. W. Dard) is figured, but in the accompanying note nothing new is revealed.

Epidendrum aromaticum.—A very old species, with whitish, fragrant flowers, with purple markings on the lip.

Lælia De Geestiana (Jongheana × flava). Raised in the gardens of M. le Marquis de Wavrin, and flowered in four years from the time the cross was made. Flowers formed like those of L. Jongheana; white, with crimped, yellow lip.

Lælia Eugène Boullet.—The result of a cross between Lælia harpophylla and Brassavola glauca, and consequently a Brasso-Lælia. Flowers yellow, with dark red lines at the base of the lip.

Stanhopea oculata.—Sepals and petals yellowish, spotted with purple. Lip white, with a dark purple blotch at the base.

Lælio-Cattleya Ernesti (C. Percivaliana × L. flava).—Raised by M. Ch. Maron. A pretty yellow flower with reddish-purple markings on the lip.

Lycaste Deppei.—A well-known, free-flowering species with greenish sepals spotted with red-brown. The petals are white, and the lip yellow marked with crimson spots.

Odontoglossum cordatum.—Flowers yellowish, barred and spotted with red-brown; lip white with reddish markings.

Oncidium graminifolium.—Sepals and petals greenish, heavily marked with chocolate colour; lip light yellow. Native of Mexico and Guatemala, the specimen figured having been imported from the latter country by MM. Van de Putte & Co.

It is pleasing to see that such fine old species are still commanding attention and considered worthy of illustration.

RHODODENDRON PARVIFOLIUM

This species (by some considered synonymous with R. Anthopogon) is an excellent little plant for the filling of small beds or for planting in the rock garden, as here, where it fills a small recess of about three yards in length at the base of a perpendicular piece of rock-work devoted principally to the Callunas.

It grows about eighteen inches or less in height, and is of a rather straggling habit, the stems being wiry. We find it a good plan to peg down these wiry stems and cover them with a little peaty soil, in which they soon make roots. By this process a well-covered bed is soon obtained.

The species is closely allied to R. lapponicum and to R. dauricum. From the first it is distinguished by its taller habit, and by the filaments of the stamens being hairy at their base, while from the latter species it differs in its evergreen character.

It is the earliest of the Rhododendrons to bloom here, commencing about the latter end of December, while flowers may still be found upon the plants at the end of February. In the colour of the flower it resembles R. dauricum, and, like that species, it is liable to be injured by frost, but a welcome display is sometimes secured if the weather is favourable. It is very amenable to cultivation, and, indeed, seems to develop a vigour not obtained in its native habitat, if we may judge by the imported plants. The plants delight in a peaty soil, like others of the genus.

I am indebted to Professor Balfour for the use of the photographs. *R. L. Harrow, Royal Botanic Garden, Edinburgh.*

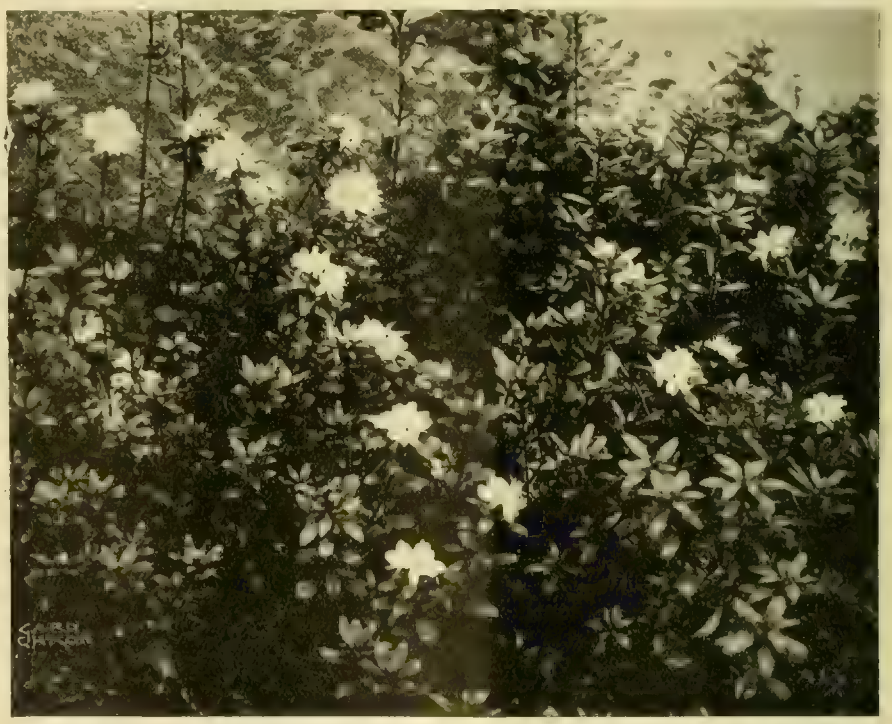


Fig. 66.—Rhododendron parvifolium, flowering in Edinburgh Botanic Garden.

COLONIAL NOTE.

SEED PACKING.

The letter on seed packing in your issue for January 20, 1906, is one of the most unsatisfactory pieces of evidence which it has ever been my lot to discuss. We recognise the effort made, and the growth of the seeds, but the result could easily have been anticipated; in fact there is nothing improbable in the seeds growing on a single occasion, but the experience of men longer in the tropics is, that unless seeds are sent in something more than ordinary paper packets, they will be found to "succumb" to "severe" attack. On the other hand, there is abundant evidence that seeds, which formerly could not be used to advantage in the tropics, can, when properly sealed in dry air, be kept for a considerable length of time and maintain undiminished vitality, while if left in paper packets for even short periods they become utterly useless. Several eminent seed firms have recognised the fact, and are now sending out to the tropics seeds properly protected against climate, insects, and fungi, which will certainly replace the old style of paper packets. Some merchants do not appear to understand that a buyer of thirty years' tropical experience can possibly know what he wants. Trade is obtained by supplying to the buyer what he wants, and not with what the British merchant thinks is good for him. Considerable evidence on seed packing is being collected, and I shall be happy to forward it as soon as ready. It is sufficient at present to justify the placing of orders with those who will give attention to a buyer's wants. *J. H. Hart, Botanical Department, Trinidad.*

FOREIGN CORRESPONDENCE.

THE GULF STATES AND THE SARRACENIAS.

I had a most instructive trip of nearly 3,000 miles during the past summer, circling round all the Gulf States, and from there gradually northward to some of my old Dionaea haunts near Wilmington. Some of my results have been of special interest, and could I have transported them to great Savannahs in Mississippi, where the genuine Sarracenia Catesbaei covered an area thickly for a length of 7½ miles, I am sure your readers' mouths would have watered. Equally so in southern Alabama, where thousands of acres waved crimson and white with continuous expanses of Sarracenia Drummondi, paved at the base of the myriad pitchers with millions of plants of S. psittacina, while S. flava, S. purpurea, and S. rubra helped to vary the landscape. Here I first got four lots of genuine wild hybrids—crosses of S. Drummondi × S. flava (magnificent), of S. Drummondi × S. purpurea, and of S. flava × S. purpurea. But from the hybrid point of view my great and surpassing experience was at a delightful but very malarial spot—Ponce de Leon—where in a day's botanising of about 17 miles I encountered 117 genuine hybrids of Sarracenia flava × S. purpurea, of which I have a fine lot now coming into flower in our Sarracenia house. Curiously enough this is undoubtedly the plant that Elliott had before him when he described S. Catesbaei, as a recent inspection of the type specimen in the Charleston Museum shows. What I have called his S. Catesbaei—and which so far as his description goes could not be distinguished—seems to be wholly restricted to the Gulf States and west of the Alabama river. *John M. Macfarlane.*

ARIZONA.

WE concluded to step off the train at Tucson in Southern Arizona, and to re-explore the noble range of Santa Catalina mountains.

Sickness interfered often with our work, and we had to confine ourselves to obtaining information in regard to little known regions and the best ways to reach them on future trips.

Of course the Oaks were the most numerous and accessible trees, and we secured many specimens—not yet fully determined. Of Pines we found two forms of P. Montezumæ, one of them with cones nearly a foot long: others were the beautiful and widely disseminated pseudo-strobus, the Teocote, the leiophylla, the oöcarpa, the Hartwegi in two forms, and one not yet determined for want of sufficient material. We also collected specimens of the sacred and only Abies of the Republic, A. religiosa, several Taxodiums, Cypresses and Junipers, with a host of Acacia, Mimosa and other pod-plants so abundant in tropical countries.

Arriving home as late as Christmas, we have had much to do of other business, while our collections have had to wait. *J. G. Lemmon, Oaklands, California.*

JAPAN.

A NEW GENUS OF CONIFERS.

I enclose a curious specimen of Conifer which is found on Morrison, the highest peak in Formosa. As far as my knowledge extends, this does not seem to belong to any described genus. I think this will be a new genus, just intermediate between Cunninghamia and Cryptomeria. The cones are very much like those of Cunninghamia, while its vegetative parts bear most resemblance to Cryptomeria. I have named this new plant "Taiwanites," as the plant comes from the island of Formosa. I hope you will be so kind as to examine this species and to let me know your opinion about it. I am going to publish this genus in the Botanical Magazine of Tokyo. I shall be very glad to send you my paper about this new genus and its affinity to other genera (with diagnosis and a plate) if this genus should fortunately be recognised by an authority like you. *B. Hayata, Botanical Institute, Science College, University of Tokyo.*

[We hope Prof. Hayata will be able to send us seeds of this very interesting plant, which would be a great addition to our collections, and possibly, owing to the elevation at which it grows, hardy in the warmer parts of these islands. The technical description of this new Conifer, which has the foliage of an Athrotaxis and the cone of a Tsuga, will, at Prof. Hayata's request, be laid before the Linnean Society.—ED.]

THE ALPINE GARDEN.

SAXIFRAGA FERDINANDI COBURGII.

THIS plant is undoubtedly one of the gems among the early flowering members of this interesting and beautiful genus. Dwarf, even diminutive in growth, the species at once strongly appeals to all who take delight in choice, early flowering plants. The minute rosettes of leaves approach somewhat to S. aretioides primulina, but with a pronounced incrustation almost equal to that of S. cosia. The peduncles are not more than one inch in height, 2-3 flowered, the half-inch wide blossoms coloured a shade of greenish yellow. In size the blossoms are not unlike the form of S. aretioides above-named, but in the deeper yellow colour they are quite distinct. This extremely rare species comes from Macedonia, and is an ideal subject for pot culture in sandy loam.

SAXIFRAGA SCARDICA.

IN the issue of the *Gardeners' Chronicle* for February 10, p. 89, a quotation from the *Botanical Magazine*, having reference to the above, stated that "it may be expected to supersede, to some extent, the well-known S. Burseriana, as it is more showy and stands damp weather better." As these two species rarely flower at the same time in the open, one can hardly imagine the two in competition. S. Boydii alba is more often in flower at the same time as Burser's Saxifrage, and, opening its blossoms like this species quite close upon the tuft, suffers from rain and frost. S. scardica is one of the most beautiful of later flowering species, and in stature and flowering would be best compared to S. Boryi and S. marginata, all white flowering forms and very beautiful. *E. Jenkins.*

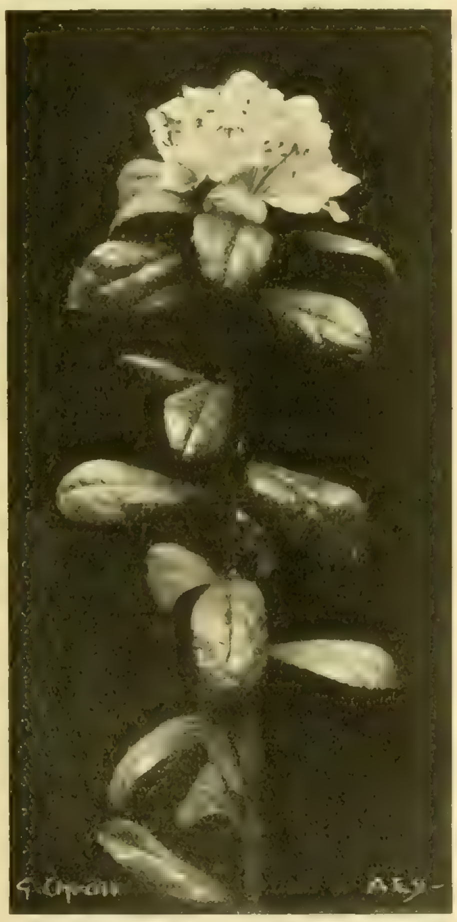


FIG. 67.—SINGLE PLANT OF RHODODENDRON PARVIFOLIUM.

(For text see page 164.)

GALANTHUS NIVALIS FLAVESCENS.

GALANTHUS nivalis flavescens is one of the few of what are popularly called "yellow" Snowdrops, although the segments of the flower are not yellow, but white, and the only portions which are yellow are the ovary, the markings of the inner segments, and the stems themselves, which are more yellow than green. Of the three or so varieties which prove constant in colouring, the best and most vigorous is that known as flavescens, which was found in a cottage garden in Northumberland some sixteen or seventeen years ago by Mr. W. B. Boyd, of Faldonside, Melrose. It is both larger and brighter than lutescens, and, as it is apparently a better "doer" in most gardens, it will likely grow in favour, although much scarcer at present than the smaller yellow variety. I have grown the variety for several years, but it seems to prefer the stronger soil of my present to the more peaty one of my former garden, and this season it is more vigorous than I have seen it before. Some people are sceptical as to the beauty of these flowers with yellow markings until they see them in bloom, when they generally admire them.

SCILLA BIFOLIA RUBERRIMA.

AMONG the earliest forms of the valuable Scilla bifolia which I have in my garden here is a pretty form raised by Mr. James Allen, and called by him ruberrima. It is much brighter in the bud when it first opens than the typical S. bifolia or the greater number of its forms, opening rather red than blue, while its leaves are also quite chocolate-coloured. It seeds freely, but the seedlings are not reliable in their colour, and they frequently revert to the type. A hardy little flower, when S. bifolia ruberrima finds its way into commerce, it will be appreciated by the lover of out-of-the-way bulbs. *S. Arnott, Sunnymead, Dumfries.*

LEAVES FROM MY CHINESE NOTE-BOOK.

THE FLORA OF THE DISTRICT.

(Continued from page 139.)

About six o'clock the rain ceased, and we began to think of the day's excursion, in which I hoped to find Meconopsis integrifolia, the plant I had travelled from England to these wilds in quest of. We instructed the soldiers who were with us to go down and commandeer one of the farmhouses a thousand feet below, and get our baggage and sick cook carried down there. Most of the men seemed better, but the cook was neither better nor worse than he was the night before.

This Ya-chia pass enjoys an unenviable reputation, and is much dreaded on account of its violent and asphyxiating winds. It is said to be the only pass in the neighbourhood which "stops people's breath." Seized with faintness, many porters lay down by the roadside, lose heart, and soon die. The Chinese attribute the ill-effects to the presence of malignant demons, against whom it is powerless to fight. I have not the slightest doubt but that our cook would have died had he been left to himself. He had quite lost heart, and would exert himself for nothing. There is indeed something very peculiar about this pass. It is not mere altitude, for I had this same cook with me at much higher elevations, and he was never affected in the same way.

At 7 o'clock we set out for our day's collecting. We were not more than a hundred yards from our hut ere we were again drenched to the skin, but later the sun came out and things improved.

The ascent from the hut to the head of the pass (13,100 feet) is of the easiest. The road lays through a sloping valley, half a mile or so wide, flanked by steep spurs from the snow-clad heights. A considerable torrent flows through the valley, and being much swollen in consequence of last night's heavy rains, fording this torrent was not the simplest of matters. Parts of this valley are heath-like and covered with a dense scrub. Other parts consist of Alpine meadows intersected by numerous streamlets and ponds. These meadows were gay with flowers of every hue, and a right pleasant time we spent among them!

On this side of the pass the tree limit is roughly about 11,000 feet, but trees are very scarce. Around this altitude the vegetation consists largely of scrub, composed chiefly of bushes of evergreen holly-like Oak, 4 to 6 feet high, three species of Spiræa, Berberis spp., Lonicera spp., and a few Rhododendrons. This belt quickly gives way to Rhododendrons, which at 12,000 feet and upwards form dense impenetrable thickets.

It is, however, the Alpine meadows that rivet and fascinate one's attention. These are carpeted with Anemones, Primulas, Pedicularis, Delphiniums, Gentians, and I know not what besides, each taking unto themselves large areas and transforming them into masses of blue, yellow, white, red, and purple. I wish I had the ability to describe this floral paradise with all its glories, but this is beyond me. All I can do is to enumerate a few of the outstanding features, and leave the rest to the imagination of my readers.

Individually, Primula sikkimensis, Rheum Alexandrae, and Trollius yunnanensis demand a place in the front rank. The Sikkim cowslip is well known to plant-lovers, and I would that these good people could see it as it occurs in these regions. In moist meadows, and by the sides of streams and ponds, it grows in thousands and hundreds of thousands, like the common Cowslip in an English meadow. On many a plant I counted 20 scapes, each with huge umbels, and the air was laden with the soft delicious odour of tho flowers. Rheum Alexandrae is in these regions what R. nobile is in Sikkim. Sir Joseph Hooker* thus describes the Sikkim plant: "On the black rocks, the gigantic Rhubarb (Rheum nobile) forms pale pyramidal towers, a yard high, of inflated reflexed bracts, that conceal the flowers, and overlapping one another like tiles, protect them from the wind and rain; a whorl of broad green leaves, edged with red, spreads on the ground at the base of the plants, contrasting with the transparent bracts, which are yellow, margined with pink. This is the handsomest herbaceous plant in Sikkim." This description might well have been written in the valley of the Ya-chia col, so well does it cover the Chinese plant. The differences are mainly in the leaves and bracts, which are longer and much less rounded in the Chinese plant. Whilst I am not prepared to grant to R. Alexandrae the first place amongst the herbs of this region, its right to a foremost place cannot be denied. I have in mind as I write, a sloping mountain-side, somewhat spongy and boggy, with boulders jutting out here and there, whereon grew thousands of these plants with their "pale pyramidal towers." The Chinese name for this plant is "Ma Huang" (Horse Rhubarb); they do not use it medicinally. Let us hope that this Chinese species will prove more amenable to cultivation than its Sikkim congener has hitherto done. Like the last, Trollius yunnanensis is also peculiar to these regions. Imagine Ranunculus cortusaefolius, with small leaves and slightly larger flowers, and you have this plant. This Trollius is essentially a social plant, and to see thousands of plants massed together, one mass of lovely yellow, is to remember it. I have used Franchet's original name for this plant, as I consider it a good species and not merely a variety of T. pumulus, to which he subsequently reduced it.

Pedicularis is the genus *par excellence* of these Alpine meadows. Altogether, about 130 species of Pedicularis are recorded from China, of these fully two-thirds occur in the far west. During the day I gathered 17 fresh species; some of these were prostrate, others a few inches high, others, again, were a foot or more high. All were a mass of flowers, embracing every colour save blue; it is a great pity we cannot cultivate this most charming genus. The difficulty is that all are more or less parasitic—very often on the roots of grasses.

Corydalis is another genus which deserves more than mere passing reference. Some 58 species of this genus have been recorded from China, and fully half of these are found in the west. The majority of the species favour rocky or heathy places. All the cardinal colours, save green, are represented in this genus. A species 4-8 inches high, with lovely deep-blue flowers, is one of the features of the highland flora around the Ya-chia col.

I have already mentioned several species of Primula, and on another occasion I shall have something to say about many other species which abound hereabouts. I must, however, enumerate two species which are very striking constituents of the Ya-chia col flora, viz., Primula involucrata and P. amethystina. Acres of moist grassland were carpeted with the pink flowers of the former, and even larger areas of heath-land with the dark-blue or purple flowers of the latter.

Alongside streams and on the heaths I collected several species of Senecio (Ligularia), some with handsome flowers and foliage. One fluviatile species (S. nelumbiifolius), with huge rounded leaves and large cymose clusters of small yellow flowers was particularly attractive.

Amongst scrub in heathy places the handsome Cypripedium tibeticum occurs in thousands. This species, with its large, dark-red flowers, should prove a valuable addition to the list of hardy Cypripediums. Lilium lophophorum, various species of Anemone, with white, blue, and yellow flowers, many species of Gentiana, and many leguminous herbs and sub-shrubs help to swell the list.

Above 12,000 feet an occasional plant of the medicinal Rhubarb (Rheum officinale) was encountered. This is a handsome and conspicuous plant; its much-branched inflorescence of white flowers is often 7 feet high. On another occasion I met with it in hundreds. This Rhubarb occurs as high up as 14,000 feet, the highest altitude of any tall-growing herb in this neighbourhood. On dry, heathy ground, several typical Tibetan plants are found, such as stemless Composites, various species of Allium, Androsace, Saxifraga; the tiny Ephedra Gerardiana var. sikkimensis, and the pretty Stellera Chamæjasme, with its terminal globular heads of variously coloured flowers. This latter plant grows about a foot high, and is very ornamental. *E. H. Wilson.*

(*To be continued.*)

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Temperatures.—During the spring months the gradual increase in the warmth of the atmosphere out of doors renders it necessary to pay particular attention to the admission of air to the different divisions. The constantly increasing power of the sun is very beneficial to Orchids generally, but when cold, drying winds prevail, with alternative spells of strong sunshine, it becomes almost impossible to maintain anything like regular temperatures in the houses. Even the experienced grower will need to exercise careful judgment to discriminate between the dangers of admitting too much air or too little. The state of the weather outside should be the principal guide, and should be carefully studied by growers. Many of the plants have already re-commenced to grow, therefore large volumes of air, especially if admitted from the roof ventilators, cause a down draught, which is injurious to many tender, species. As a guide to the beginner the following remarks may be useful:—The atmospheric temperature of the Odontoglossum or cool house, under the sun's influence, will often rise considerably above 65°, or what is thought to be higher than is necessary for the well-being of the plants. Especially may this happen on bright, cold days when the external air is at or below 40°, and is therefore unsuitable to be allowed in sufficient quantity to keep down the temperature inside, especially when admitted through the top ventilators. On such occasions it is advisable to let down the blinds, and gradually increase the ingress of air through the lowermost ventilators. When the atmosphere outside is congenial and moist, and has a temperature of 50°, ventilate more freely in every department. In the other divisions, when the wind is in a cold quarter and the sun shining brightly, it is also advisable to shade the plants, and to keep up the requisite degrees of warmth by means of the heating apparatus, also to give all the ventilation the weather will permit. On several occasions lately the sun has been rather bright and powerful, and on looking through a small collection of Orchids a few days ago I noted several leaves which have been scorched through flaws in the glass. When this happens the flaw should at once be found, and then thickly daubed with white paint, or a pane of good, clear glass substituted for the faulty one.

Preparations for Re-potting.—During the next few weeks many plants will require to be repotted; therefore a sufficient quantity of peat, turfy loam, &c., should be obtained and made ready for use. Preserve and dry all the Fern rhizomes taken from the peat, as they are useful for drainage purposes. Plenty of sphagnum moss should be got in, and it is advisable to pick out all dead leaves, all particles of grass, and other rubbish. Have plenty of crocks broken up small, and procure a quantity of leaf-soil, and coarse silver sand. Old flower pots that are to be used again should be made scrupulously clean, also any old crocks that may be needed for drainage purpose. Get the loam inside and pull it to pieces, and lay it in a suitable place so as to get warm before it is used.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Chrysanthemums.—These should now be shifted into pots measuring six inches in diameter, and from these be transferred into their "flowering pots" about the middle of May. In consequence of pressure of work in all departments of the garden at this season of the year, it sometimes happens that the repotting is delayed, and there is no plant that sooner suffers from the stunted condition of the roots than the Chrysanthemum when confined in small pots. Make an effort, therefore, to transfer them into larger ones as soon as the plants have filled their pots with roots. Following this operation, let the atmosphere be kept close for a few days to encourage root action, after which period gradually increase the quantity of air admitted, and remove the glass lights when the weather continues fine. Firm potting is necessary in Chrysanthemum culture, inasmuch as it is followed by the production of a greater percentage of fibrous roots and shorter-jointed growth, which will mature perfectly, and flower satisfactorily.

Shading.—In the cultivation of a mixed collection of plants it is difficult to give to each plant a suitable position as to exposure to direct sunshine or shade. A fixed shading is not desirable where flowering plants are concerned; there is a marked improvement in the substance and colour of the flowers of Allamandas, Bougainvilleas, Ixoras, Dipladenias, and Gloriosas, when grown in sunshine. By a little careful study in arrangement, many plants can be so placed as to have their peculiar requirements fulfilled even in the same compartment. There are many beautiful stove flowering plants such as Eucharis, Anthuriums, and Gloxinias, which require partial shade, and if exposed to the direct influences of sunshine, the evaporation of moisture from the leaves would be too great, and would ultimately change their colour to a pale shade, through loss of chlorophyll. It is, therefore, necessary to syringe frequently such plants as are growing under the influences of sunshine, but in the case of plants which are heavily shaded, evaporation being slower, less syringing is necessary. Roller blinds should be fixed, to be in readiness when required for use.

General Remarks.—Increase the atmospheric moisture in the stove and intermediate house. Moderate the fires on bright mornings and thus economise the fuel—remembering that plants do not improve in growth when subjected to much heat from the hot-water pipes when the sun's rays are shining on the roof glass at the same time. Continue to pot off from the seed pans young plants of Cyclamen. Keep a sharp look-out for insect pests on Pelargoniums, Calceolarias, and Cinerarias, and take care to admit plenty of air to the Cinerarias.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Cucumbers.—Plants which were raised early in the year, and are now bearing fruit, should be afforded frequent top-dressings, applying these as soon as the roots appear on the surface, and using two parts loam, one part leaf-soil and one part horse manure. Such young plants should only be allowed to develop as many fruits as are really required, for if over cropped in the early stages, exhaustion will soon follow. Continue to pinch the shoots, and each day regulate all the young growths in such a manner that they may cover the trellis-work quickly. Now that the days are longer, and the amount of sun-heat is increasing, the plants may be lightly syringed over three or four times each day. Red spider can be prevented by syringing the plants occasionally with water containing a small quantity of soft soap and sulphur, and this will be also a good remedy for mildew. Close the house early in the afternoons, and syringe the plants in order to secure ample atmospheric moisture. Let the roots be fed liberally with diluted cow-manure water. Where there is only limited house-room, preparations should be made for cultivating Cucumbers in frames. Excellent crops can be grown in this way at a very small cost and trouble. Make up a hot-bed of leaves and long litter, place a two-light frame over it, and put in each light a mound of rich, turfy soil. When the bottom heat is at 80° and not rising, the young Cucumber plants can be safely planted, shading them from sunshine for a few days until they have become established.

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* *Himalayan Journal.*

Figs.—The earliest batch are now in flower, and there will be very little progress in the swelling of the "fruits" until that stage is passed. Maintain a steady temperature at night of 60°, and allow a rise to 75° during the day. Do not allow the trees to get dry at the roots, or many of the fruits will fall from the branches. When extra large Figs are desired, only one or two should be left on each bearing shoot, but do not remove all the others at one time, it being better to take away a few each day, as Fig trees are very subject to bleeding. Stop the shoots at the fifth leaf, and cut out any weakly growths. Afford liberal ventilation when the weather is favourable. Keep a sharp look-out for red spider, and, if this pest is discovered, sponge the leaves with a solution of soft soap or Gishurst compound made very weak.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth,
St. Fagan's Castle, Glamorganshire.

Sweet Peas—The present is a good time to sow seeds of these beautiful and deservedly popular flowers. It is unnecessary to attempt an enumeration of the best varieties in this short note, but the cultivator will be wise to restrict himself to a few varieties, and those of the very best and most distinct colouring. It is better to sow the seeds singly in 2½-inch pots, placing the pots in boxes to facilitate handling rather than to sow them in their flowering quarters. If germinated in a little heat the seedlings can be immediately removed to cold frames, and before the plants are anything like root-bound, or drawn, they should be planted out in the ground previously prepared for them. Six inches apart in a single row is quite close enough distance to plant. In doing this they should be placed well into the soil, covering the stem, and pressing with the feet all round to make them perfectly firm. When 3 or 4 inches in height they must be supported with stakes in the manner preferred by the cultivator. By removing the newly-formed seed pods, incessantly cutting the blooms, and by affording plentiful supplies of water during dry weather, the natural flowering period of the Sweet Pea can be much extended. The advantage of sowing in pots is that the plants, being raised in frames, are to a great extent exempt from the attacks of birds and slugs. A more satisfactory growth is thus obtained, and no gaps in the border are left unfilled.

Callistephus hortensis.—The China Asters are amongst our best half-hardy annuals for making the flower garden bright and gay during the summer and autumn months, and of them all none surpasses Callistephus hortensis—more often catalogued as sinensis—for beauty and usefulness. It can be obtained in distinct colours of dark blue, mauve, pink, and white. The flowers are large and single, and in a cut state are invaluable for bold decoration in vases. The plant itself is of bold habit, attains a height of 2 feet, and is admirably adapted for using as an autumn bedder. The seed of all the China Asters can be sown at the present time in shallow boxes in a slight heat, or in a frame having a very little bottom heat.

The Ten-week Stock is another delightful half-hardy annual, which is much admired because of its fragrance and its varied colouring. A week or a fortnight hence will be time enough to sow the seeds either in shallow boxes or in a cool frame. Care should be taken to ensure the plants making sturdy growth, by placing them near to the glass. If, instead of pricking them into boxes as a final shift, the seedlings are potted up singly, so that transplanting into the open ground may be done without the roots being disturbed, the extra trouble will be recompensed by better results.

Delphinium "Queen of the Blues," though a perennial, is best treated as a half-hardy annual. If sown now in heat it can be had in flower by the end of June. Too much cannot be said in praise of this lovely plant, either for use in the mixed border or as a bedder. In masses it is most effective. Its habit is dwarf, hardly exceeding 18 inches in height, and the colour of its flowers is a clear intense blue—a colour so rare but so desirable in flowers. D. "Porcelain Blue" is similar to the above, but its flowers are of a lighter shade, yet very attractive.

Other half-hardy annuals to be sown at the present time are Alonsoa, Arctotis, Browallia, Cosmea, Helichrysum, Marigold, Mesembryanthemum, Petunia, Rhodanthe, Schizanthus, Scabiosa, and also Abronia, Antirrhinum, and Gaillardia, which can be treated as half-hardy annuals.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder,
Bart., Leonardslee, Sussex.

Peaches and Nectarines.—Proceed with the training of these and get the work done before the buds commence to open. Leave plenty of space for subsequent growths to be nailed in properly, and do not hesitate to cut away the worst shoots wherever any thinning may be necessary. In pruning take care to cut to a wood bud, for it will be noticed that a fruit will drop, even after setting, if there is no growth beyond it. When pruning has been finished clean over the surface of the border and put the labels into good condition and suitable positions. Means for protecting the blossom should be provided. If blinds are used, these should be at once erected and made ready, and when once they have been drawn down at night they should be drawn every succeeding night until danger from frost has passed. A double thickness of fish netting is sometimes put over the trees by means of straining it over long poles. These should be fixed at the top and bottom in order to prevent the covering from getting entangled in the branches, and the poles should be put at least 3 feet or even 4 feet from the wall at the base, and it will then be possible to walk under the net and examine the trees.

Apricot Trees.—Means for protecting the blossom should be got ready at once, just as in the case of Peaches and Nectarines.

Early Pears.—Trees showing flower may have some netting thrown over them, for this will shield them from several degrees of frost. Clapp's Favourite is one of the earliest varieties to flower with us.

Labelling.—Attend to the labels on all fruit trees. If very many are required the "Acme" is one of the best, and when fastened on the tree by means of copper wire will last for a long time. If they become disfigured or dirty they may easily be cleansed by washing them with paraffin. Suspend them on the branches in a position easily seen when used for bush or pyramid trees, but in the case of wall-trees they should be nailed to the wall. The "Ideal" label for fixing at the base of wall-trees has a very good appearance, and affords pleasure to visitors to the fruit garden.

Mulching.—When the trees against the wall have been put in proper condition for the season rake over the surface of the border, and either supply a mulch of long manure or a good thickness of coal ashes. These latter serve as a good mulch, and are easy to keep clean during the summer. A four-foot path under the wall should always be left clear of crops.

Late-planted Strawberries.—Hoe over the surface of the ground between the rows on a fine day. Strawberries may still be planted from store-pots. Apply a mulch to older plantations if this has not already been done.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of
Portland, Welbeck Abbey, Notts.

Ridges for Celery.—One great advantage in having these ridges made early is that it permits the use of the tops of them for the cultivation of dwarf Peas, French Beans, or Lettuces. If the seeds of these be sown as early as possible, the crops will mature before the soil is required for earthing up the Celery. In clayey land it is a mistake to make the trenches very deep, because the roots of the Celery are then in a colder medium than would otherwise be the case. For general purposes, two lines of Celery can be conveniently grown in one trench, thus economising space over the single-line system. A trench 2 feet in width is ample for two lines, and there is no need to make it more than 1 foot in depth. Six inches of well-rotted cow manure, or the same amount of decayed vegetable refuse, will be sufficient manure for the crop. If the bottom soil is good this can be dug into it, but if not then it is better to dig the bottom of the trench before adding the layer of manure, and finishing off on the top with 6 inches of soil.

Sowing the Seeds.—The main crop must now be sown indoors, according to previous directions. When the seedlings commence to show the rough leaf, the plants will not require more than an intermediate temperature. Guard them from suffering the least check to growth from the first, and they will then be less likely to run prematurely to seed. Seed of Celeriac should also be sown and treated in the same way as far as the first stages of growth are concerned. A successional sowing may be made where the crop is to mature, and although the roots will hardly be so large, they will become of a serviceable size.

Vegetables in Frames.—Young crops, such as Turnips, Carrots, Globe Beet, &c., will require prompt thinning, although there is no need to thin severely, as these roots will be used small and in quantity. Ventilation must be afforded with extra care during the present month. A moderate damping down early in the afternoons will be conducive to quick growth. Potatos will need earthing up, and if the haulms are inclined to topple over, let them have the support of a short stake. A few well-sprouted tubers may still be planted to yield new tubers before a crop will be ready in the open. Seedling Cauliflowers and Cabbages, growing in frames, may be given a fresh supply of water, and more air, as they continue to increase in size. Let little batches of Lettuces, and also the Turnip-rooted and long Radishes be planted to meet the requirements of the near future. Peas that were sown in December should now be showing their first flowers. Syringe them heavily in the afternoon of sunny days. Among a number of varieties that were sown here at the period mentioned, Early Giant is the first to show its blossoms, but I expect some of the dwarfer varieties will overtake it, as they usually fill their pods more quickly.

THE APIARY.

By Chloris.

Spring Notes.—In looking through a file of local papers a few days ago, I saw recorded that a very early swarm of bees had been taken during the first few days of March, and this was regarded as wonderful luck. As the winter has been unusually mild we may hear of other early "takes," for these swarms, so called, have only turned out because there is an empty cupboard. No brood, queen cells, &c., would be found if the hive from which the bees had emerged were examined, as is the case during the swarming period. Those who desire a good store in the supers of honey from the fruit bloom should commence feeding with syrup, and all hives should be well examined when the weather permits to make sure that their inmates have plenty of food, and to spare. Keep a good supply of quilts on the frames, taking care that the corners are filled, so that no leakage of heat may take place Remember that those bees are on the wing most that need food, and often during very unsuitable weather. There is no economy in keeping bees on the border of starvation. Commence the year well by taking time to examine the contents of the bee home. Last year a friend of mine, who always does things in a hurry, especially bee work, lost several queens, and such loss at this season is almost irreparable; at the least, much time is lost, which can be ill-spared. Remember then to do the work leisurely, thoroughly, and above all gently. Nothing in bee-keeping pays so well as gentleness in handling.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c. but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Mar. 20	Roy. Hort. Soc. Coms. meet.
WEDNESDAY,	Mar. 21	Roy. Bot. Soc. Show, Regent's Park.
THURSDAY,	Mar. 22	Exhibition of Colonial-grown fruit at the Roy. Hort. Soc. Hall, Vincent Square, Westminster (3 days.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—43·2°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, March* 14 (6 P.M.): Max. 44°; Min. 30°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 15 (10 A.M.): Bar., 29.9; Temp., 53°; *Weather*—Overcast.

PROVINCES.—*Wednesday, March* 14 (6 P.M.): Max. 50° Ireland S.W.; Min. 32° Scotland N.E.

SALES.

MONDAY—

Hardy Border Plants, Perennials, Lilies, Roses, Azaleas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

TUESDAY—

Herbaceous and other plants, Liliums, Hardy bulbs and plants, &c., at 12.

4,000 Roses, at 1 and 3, followed by Palms and Plants, Azaleas, &c., at 67 and 68, Cheapside, by Protheroe & Morris.

WEDNESDAY—

Roses, Shrubs, Palms, Lilies, &c., at Steven's Rooms, King Street, Covent Garden, W.C.

THURSDAY—

Unreserved Sale of Duplicates from the well-known "Rosslyn" collection of Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—

Unreserved Sale of Duplicates from the "Bank House" collection of Orchids, 1,000 Cypripedium Fairrieanum, 6,000 Odontoglossum crispum, Cypripedium, Laelio-Cattleya, and Cattleya Hybrids, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Examinations in Horticulture.

The letter from Mr. Watson, published in a recent issue, has elicited many more letters than we could publish even were it desirable to do so. Speaking generally it appears as if the writers looked on one side of the question only and are disappointed because the results are not such as they hoped for. A little reflection would show them that such consequences as they seem to expect are unattainable by any method of examination. If we do not misinterpret their views, they seem to think that experience can be gained, or even tested, in the examination-room, at least they write as if that were their opinion. A lad has had the advantage, we will say, of attending lectures and demonstrations; perhaps he has had to work for a short period under a competent instructor; he passes the examination in such a way as to satisfy the examiners—a few pass with distinction. But supposing these things to have happened, what guarantee can they possibly afford of a man's practical ability? Little or none. What they do show is that the man has made the endeavour to equip himself with a certain amount of knowledge. That knowledge by itself is a means, not an end. A child learns the alphabet not for the mere sake of knowing letter A from letter B, but for the purpose of turning this knowledge to account in the business of life. If he is unable or unwilling to do this, his knowledge of the alphabet can be of no service to him or any one else.

So the garden-student in the examination room is expected to have acquired at least a rudimentary acquaintance with the structure of plants, of the work they do, and of the conditions under which they do it. No one, we should have thought, would have questioned the supreme value of such knowledge properly applied. But to our astonishment some writers, holding high places in the fraternity and for whose opinions in general we have the highest respect, write that their experience of these "highly-certificated and college-trained individuals" is anything but satisfactory. We have often heard similar expressions of opinion from nurserymen and others who want cheap labour, and are only concerned with the progress of horticulture in so far as it contributes to their commercial prosperity. We have always thought that such opinions were the result of that imperfect appreciation of what it is reasonable to expect from an examination, to which we have already alluded. The writers from whose letters we quote speak of "college-trained" lads proving unsatisfactory. Is that not an evidence that, however highly certificated the pupils may have been, they have *not* been trained? That, surely, is a defect not to be credited to the examination or to the examiners. The training has to come after. Doctors have, in their student days, to attend all sorts of lectures, but it is not until they have been well grounded in the principles of their science that, under the guidance of their seniors, they undergo actual practical training in their art in the hospital wards. But even after two or three years' work in the lecture room and laboratory, followed by as many more passed in applying the knowledge they have obtained there, they still lack that most valuable degree of experience which comes only to a man when he is left to his own resources. Surely the same remarks apply to a young gardener.

We have been told of a gardener entrusted with the collection and labelling of hardy plants who is most efficient, and never puts a plant behind a wrong label, though he can neither read nor write, and cannot even sign his own name! If this be the type of man required in a garden, we shall despair of the attempt now being made by the British Gardeners' Association to improve the condition of gardeners, to raise the profession to a higher level, and to secure to the practitioner a higher reward for his services. If we are to remain hewers of wood and drawers of water, why, then, let us not be troubled with examinations, let us not repine at our lot or yearn for more ample recognition. We are worth what we get, and no more. But, if we are concerned in the advance of horticulture, if we want to be better practitioners than our fathers, owing to their lack of the advantages we possess, could have been, then, by all means, let us give our young gardeners the opportunity of being able not only to appreciate, but to turn to practical account, the resources which advancing science is always placing at our disposal, if only we could, or would, make use of them.

It was our experience on one occasion to have to examine several candidates for a public appointment. The examination was partly written, partly oral. One of the candidates whom we had reason to believe was a good all-round practical gardener appeared in due course at the table for his oral examination. The table was strewn with plants, seedlings, grafts, fruits, vegetables, and the like, which formed the subjects on which the candidate was questioned. These things were what the man must have been in the habit of handling in his daily work for several years. Nevertheless, his answers were extremely unsatisfactory, till at last, wearied by the negative results obtained by previous attempts to elicit information, a question was asked concerning the difference, from a cultural point of view, between a Cauliflower and a Broccoli? Still no answer. It was then suggested by the examiner that the one was hardier than the other. "Yes," was the reply, "didn't you know that!" We have forgotten the result, but we expect the questionings were put an end to as soon as possible. The examinee in this case was a practical gardener of middle age and much experience, but utterly unable to express his ideas in an examination-room. We hardly think this was the fault of the examination system, although it is true the examiner failed in his attempt to make manifest the qualifications he had other reasons for believing the candidate to possess.

We were reminded of this circumstance by reading the annexed report of the examiners told off in January last by the Royal Horticultural Society to conduct the examination:—

"Examination of Men employed in Public Parks and Gardens.

"The examination was partly written and partly *viva voce*, and occupied three hours and 20 minutes in all. . . . .

"Ninety candidates entered their names, and of these only one was absent. . . . .

"Speaking generally, the answers, both written and *viva voce*, revealed a distinctly remarkable absence of observation and thought, combined with by no means too high a degree of ordinary education. Most of the candidates appeared to possess a rough and elementary knowledge of the subjects inquired of, but were unable to give expression to their ideas in coherent and intelligent language. This may be accounted for perhaps by the fact that it was, to the great majority, their first experience of an examination, and many of them showed evidence of a quite unnecessary degree of nervousness.

"The examiners have given credit wherever possible for good intentions, and regret that, even so, they are unable to include more names in the class list.

"The examiners desire to impress on the candidates the absolute necessity of observation as they pursue their daily work, and the application of thought as to the why and the wherefore of what they do and what they notice. A man can never be really fit for high place in any calling in life unless he both thinks and observes. Rules are good, but only so long as they lead to the inquiry as to why in each case they should be followed, and what effect they are intended to produce.

"The examiners urge the unsuccessful candidates not to be disheartened by failure in their first attempt, but to set themselves carefully to observe the things about them, and to think out for themselves the reasons of their different operations. Twelve months of this, coupled with inquiry from their superiors on points which seem difficult to fathom, will probably result in their success at the next or at some subsequent examination.

"William Crump, C. R. Fielder, Geo. Nicholson, Owen Thomas, Edward White, W. Wilks, *Examiners.*"

Could a better set of examiners have been found?

We may compare the state of things here revealed with our knowledge of certain "college-trained" gardeners in Belgium and

France. One such case is before us now—that of a highly-trained youth speaking and writing fluently French, German, English, and probably Flemish. It has not been our lot to meet with many, if any, young English gardeners of corresponding position who could speak any language but their own, and this is by no means a solitary instance. But then we have been often told that young men of this type when tried here are found to be failures so far as practical work is concerned. We suspect, as we have said, that some employers do not want high-class labour. At any rate, we know that many of these young men are now filling with ability responsible positions at home and abroad, which they could hardly do were their practical training as deficient as it is sometimes assumed to be.

The examination system should serve as one method of raising the gardening profession in the eyes of the employers, and thus benefit the employed. If it does not do this effectively, some means must be taken of making it do so. At any rate, let us not depreciate any honest attempt to raise the intellectual and social condition of the gardener, such as is being made, not only by examiners, but by the British Gardeners' Association.

OUR SUPPLEMENTARY ILLUSTRATION.—The unpretentious looking building now known as Kew Palace has associations with royalty that give it a special interest. It is also "a good characteristic example of old English architecture." Built in the latter part of the 17th century by Sir HUGH PORTMAN, a "Dutch merchant," it was in his time known as the "Dutch House." In 1730 it was leased by Queen Caroline, wife of George II., "when she began her alterations and works in Richmond Park and the gardens of Richmond Lodge," and was afterwards the residence of Frederick Prince of Wales. After his death his widow occupied it "while engaged in laying out and extending her famous exotic gardens—the origin of the present world-renowned Kew Gardens." In 1781 Queen Charlotte acquired it and used it as a sort of nursery for her children. She and the King preferred Kew to Hampton Court, living there with their family "as the simplest country gentlefolks." At that time the public were admitted to Kew Gardens on Thursdays only, when the green was crowded with carriages, and parties came by the river with bands of music to the ait opposite the Palace. When the King, George III., became of weak mind he was domiciled at Kew, where he spent his sane spells in improving the grounds at Kew, and in farming at Richmond and Mortlake. Queen Charlotte died in 1818, and from this time forward Kew Palace remained uninhabited until the year 1898, when the late Queen Victoria decided that in commemoration of her Diamond Jubilee it should be open to the public as a show place. It is now open on every day except Fridays. The rooms contain pictures and other objects of art and interest, mostly relics of royalty. *A Guide* to the Palace* and its contents, with a catalogue of the pictures, is on sale in the Palace. Until a few months ago the view of the Palace from the gardens was spoilt by the old Royal stables and yard, which were partially screened by trees. Trees, stables, and yard have now been swept away, the result being a great improvement, as will be seen from the photographic view taken from the Broad Walk. The view from the Principal Entrance on Kew Green suffers at present from a ladies' cloak room which is partly hidden by shrubs, but we understand that this will shortly be removed.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will be held on Tuesday, March 20, in the Society's hall, Vincent Square, Westminster. The Narcissus Committee will meet on this occasion. A lecture on "Parasites and Saprophytes among Flowering Plants," illustrated by lantern slides, will be given by the Rev. Prof. G. HENSLOW, M.A., V.M.H., at 3 o'clock. The exhibition of Colonial-grown Fruit and Vegetables, both fresh and preserved, will be held, as already announced, in the Society's hall, on Thursday, Friday, and Saturday, March 22, 23, and 24. The exhibition will be opened at 1 o'clock on March 22, and at 10 a.m. on the two following days.

SCIENTIFIC COMMITTEE.—We learn with great pleasure that Mr. CHARLES C. HURST has kindly consented to give a simple statement of the Mendelian Laws of Inheritance before the Scientific Committee of the Royal Horticultural Society at the next meeting on March 20, 1906. Mr. HURST will illustrate his remarks by means of specimens, and will show how the laws affect the practice of hybridisation. Fellows who are not members of the committee, but who are desirous of attending the meeting, should communicate their wishes to the acting president or secretary of the committee.

SMALL HOLDINGS.—The Departmental Committee appointed by the President of the Board of Agriculture and Fisheries to enquire into the subject of Small Holdings held a sitting on March 7. Evidence was given by Mr. H. RIDER HAGGARD.

NATURE-PRINTED POSTCARDS.—The Country Press, of 19, Ball Street, Kensington, are issuing a very pretty series of postcards showing British Ferns, nature-printed on a black background. These pictures (seven cards representing 42 species) are from the plates of Mr. FRANCIS HEATH'S book, *The Fern Paradise.* We understand that these cards will be succeeded by others representing various natural history subjects. It is mentioned that the pictures have an educational value, but this is greatly lessened by the facts that only the popular, not the scientific, names of the subjects mentioned are given, and that only single fronds of the Ferns shown with no allusion to size or habit or details of fructification.

IRISH GARDENING.—With so many distinguished gardeners and so many interesting gardens, both private and professional, it has been a matter of surprise to us that Ireland should not long since have had its gardening journal. That deficiency is now to be supplied. We have before us the first number of "*Irish Gardening*, a monthly educational journal devoted to the advancement of horticulture in Ireland." For some time past the need of such a journal has been felt, especially by those who are directly concerned in the work of horticultural instruction in the counties. The proposed "monthly" is issued at the repeated request of the entire body of county instructors in horticulture who have individually volunteered to take an active part in its production and circulation. *Irish Gardening* will be an educational journal appealing to all classes of the community interested in the cultivation of plants, either for purposes of profit or for the beautification of Irish homes. In addition to seasonable cultural directions for fruit, vegetable, shrub and flower cultivation, a feature will be made of short articles in clear, non-technical language upon the scientific principles underlying good garden practice, contributed by authoritative writers on the subjects chosen. Special attention will be given to the review of current horticultural literature, and to works on botany and entomology and other sciences bearing upon garden work. Arrangements for a monthly series of papers on seasonal operations are being made. The periodical is well printed on good paper, and freely illustrated, and its cost is placed at such a low rate that we earnestly hope the aspirations of its founders will be well supported by the public. The articles, as might have been anticipated from the assistance rendered by the horticultural instructors, are of a high class, and destined to be of permanent value. After a "send-off" of an appreciative character from Sir HORACE PLUNKETT, we find an article by Mr. F. MOORE on the condition of Horticulture in Ireland. The article is written in an optimistic tone, and is accompanied by a portrait of the writer. What the better class Irish gardens and nurseries are our readers have frequent opportunities of judging, but they are not so conversant with the good work which is being done by the horticultural instructors. Following the example set by Belgium, these gentlemen are conferring substantial benefits on the rural population by their lectures, and still more by their demonstrations. There seems to be no reason why the practice of profitable gardening should not be carried out on a large scale in Ireland to the great advantage of the community. Every effort to that end will meet with sympathy on this side of the Channel, and for that reason we cordially wish all success to *Irish Gardening*.

NARCISSUS "POETAZ."—This name applies to a race derived by crossing N. poeticus and N. Tazetta. The *Revue Horticole* speaks of the race as having more of the general characters of the Tazetta group, but as being more hardy and with fewer flowers to a truss than in N. Tazetta. The flowers are larger than those of Tazetta, and the cup is almost exactly like that of poeticus.

FLORIST'S BUSINESS IN THE ROCKY MOUNTAINS.—At present in our own establishment in Denver, says a writer in the *American Florist*, we have ledger accounts with more than a thousand people scattered over all the mountain country. There is hardly a day in the year that we do not send retail orders to places from 300 to 500 miles distant; and on holidays, especially before Memorial Day, these express packages go out literally by the wagon-load. Often these orders come in by telephone from some mining camp hundreds of miles away on the opposite side of the mountains. We must be in a position to know, as far as possible, the financial standing of the people scattered over this wide area, and keep the information so readily accessible that we can look up a man's credit while he holds the long-distance telephone at so much per minute. This is made possible by index cards which show at a glance what experience, if any, we have had, and also the reports as to credit received from other sources.

PEACHES AND NECTARINES.—Writing in the *Revue Horticole* for March 1, M. CHARLES BALTET puts on record some facts which ought to be interesting to students of Mendelism. The Nectarine called Lily Baltet, of which a figure is given, is a "free stone" variety, of which the parentage is as follows:—In 1884 a stone of Amsden Peach was sown. Three years after the seedling produced fruits—Nectarines—which ripened in the first fortnight of August; that is to say, earlier than other Nectarines. This variety was put into commerce under the name of Précoce de Cronceels, and received commendation as the largest and earliest Nectarine. In 1890 kernels of Précoce de Cronceels were sown, and ultimately produced fruits which were all Nectarines, some "cling stones," others "free stones." Among them was found one which ripened a little earlier than the rest, and which had a smaller stone. This variety was propagated and sent out under the name of Lily Baltet, which also won the suffrages of the electors. In 1896 M. CHARLES INGOUF in his turn sowed kernels of Lily Baltet. Seedlings were produced, grafted in 1899, and ripened fruits three years later. Some of this last batch—all originating from the same source—proved to be Peaches, others Nectarines. These are still under observation, but one of the Peaches has proved so distinct that it has been named Charles Ingouf. It is described as having fruits larger than the early American varieties, in colour carmine-red on a cream-coloured ground, and with shorter down, so that the fruits do not require the application of the brush to remove some of the down, as is demanded for market purposes in France. It ripens between Amsden and Hales' Early; that is, after the first earlies and before the second earlies, thus filling up an interval which is inconvenient to growers, dealers, and consumers. In fine, we have here examples not only of the development of Peaches and Nectarines on the same branch, but also of the production of Peaches alternately with Nectarines from seed. Peaches and Nectarines seem, therefore, to be good subjects for the students of Mendelism to investigate.

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* We are indebted to this Guide for some of the particulars here given.

The Supply of Nitrogen to Plants.—We have received from Mr. T. Jamieson, the Director of the Aberdeen Research Association, a report in which he claims to have discovered that all plants can feed upon the free nitrogen gas of the atmosphere by the agency of the hairs that are found upon the leaves. The "proof" of this remarkable discovery appears to be as follows:—The hairs, empty at first, show, as the plant develops, a little "albumen" (i.e., nitrogen-containing material) near their tips, which increases in amount, and gradually extends further down the hair to its base. Later on, when the leaf ceases its activity, this albumen is withdrawn, and the hair becomes again empty. From this fact alone Mr. Jamieson concludes that the hairs manufacture the albumen he finds in their tips from the air and then pass it on to the plant. Mr. Jamieson makes no attempt to show by analysis that his plants have "fixed" any nitrogen whatever during their growth. He dismisses the whole mass of work that has been done on this subject during the last sixty years merely because he misinterprets certain facts of a type familiar to any physiological botanist. In an earlier chapter he disposes to his own satisfaction of the theory that leguminous plants fix nitrogen by the agency of the bacteria living in the nodules in their roots. As Mr. Jamieson begins by denying the existence of these bacteria, further argument becomes hopeless. The whole report derives whatever importance it may possess from the fact that its author is backed by a large and distinguished body of gentlemen in Aberdeen, and receives a subsidy from the Board of Agriculture, and that, further, on the strength of his "discovery," he is giving advice to practical farmers to alter the character of their cropping and manuring.

Tomatos.—From the results of numerous experiments made on the growth of Tomatos under glass by the authorities of the Massachusetts Agricultural College, it appears that "undoubtedly the best system of growing greenhouse Tomatos is to plant 12 to 16 inches apart in the rows, prune to the one stem system, and head in or cut back the leaders above the fourth or sixth cluster of fruit, as circumstances require. The physiological effects of pruning or mutilating manifest themselves at first in the retardation or cessation of the growth activities, which are eventually followed by an accelerated growth. The degree of response is determined by the nature of the organs mutilated and the extent of the injury."

Manuring Potatos.—Under the superintendence of the Midland Agricultural and Dairy Institute, field-trials on the manuring of Potatos have been carried out at seven centres; three in Nottinghamshire, two in Derbyshire and one on the Institute Farm at Kingston, Nottingham. The objects of these trials were three; the first and greatest to demonstrate that the best crop of Potatos is to be obtained by the use of a moderate dressing of farmyard manure supplemented by artificial manures, rather than by a heavy dressing of farmyard manure alone; the second object was to find out the most suitable artificial manures to be so used; and the third to attempt to illustrate the fact that farmers ought not to purchase "compound manures," but should blend for themselves whatever manurial constituents their crops may specially require. The correctness of two of the aims was instructively demonstrated by the average results—namely, the advisability of applying smaller dressings of farmyard manure supplemented by artificials rather than a large dressing of farmyard manure alone; and, further, that a decided advantage is gained by discarding "compound manures" and becoming one's own blender.

The Greenwich Ratepayers' Association have recently adopted a resolution expressing appreciation of the services rendered to the public in the development and beautifying of Greenwich Park by the present superintendent, Mr. Marlow, and strongly urging upon H.M. First Commissioner of Works the desirability of establishing winter gardens in the park.

Marriage of Miss Paul.—On March 10, at the parish church, Cheshunt, by the Rev. Folliott Sandford Keysell, M.A., Vicar of Weedon, brother of the bridegroom, Miss Edith Jean Paul, daughter of Mr. George Paul, J.P., of Nursery House, Cheshunt, was married to Mr. Francis Olney Keysell, eldest son of the late Francis Price Keysell, of Grove House, Cheshunt.

Publications Received.—From the Board of Agriculture and Fisheries: *Agricultural Returns, 1905. (Produce of Crops.)* Tables showing the total produce and yield per acre of the principal crops in each County of Great Britain, with Summaries for the United Kingdom.—From the Royal Gardens, Kew: *Bulletin of Miscellaneous Information*; 1906. Contents: Decades Kewensis, XXXVI.-XL.; Diagnoses Africanæ XIV., New Orchids, 26.—*Bulletin of Miscellaneous Information*; October-December, 1901. Contents: Ground-nut or Pea-nut, Miscellaneous Notes, Title-page, Contents, and Index to Volume.—*Grass*: Pamphlet on the making and maintenance of Golf Courses, Lawns, and other Grassy grounds. From James Carter & Co., High Holborn.—*The Garden City*; Official Organ of the Garden City Association; March. A record of progress.—*Thirty-Seventh Annual Report of the Fruit-Growers' Association of Ontario*; 1905. The year was one of fair crops and good prices, as the reports from various districts show.—From the U.S. Department of Agriculture, Division of Entomology, Bulletin No. 55. *The Rearing of Queen Bees*: by E. F. Phillips, Ph.D.—*The Forest Flora of New South Wales.* Vol. II.; Part 9 of Mr. J. H. Maiden's useful work deals with Flindersia Oxleyana, the Yellow-wood, Eucalyptus dives, or Broad-leaved Peppermint, and Casuarina Luehmanni, or the Bull Oak.

NURSERY NOTES.

THE CARLISLE NURSERY.

The Nursery of Messrs. Little and Ballantyne at Carlisle is one of the best-known establishments of a similar character in this country. Particularly devoted to the cultivation of trees and shrubs, it has many features in common with those of the best Scotch nurseries, where coniferous and other forest trees are raised from seeds in such quantities as are seldom or never seen in the more southern counties. Messrs. Little and Ballantyne's new offices and seed establishment are situated close to the Carlisle railway station, but the nursery at Knowefield is further afield, though within walking distance, being within one mile from the centre of the city. Electric cars run from this point almost to the nursery. It is an old-established business, having been founded in 1812 by Messrs. Hutton. It was purchased from Messrs. Little and Ballantyne in 1871 by the present proprietor, Mr. James Watt, J.P., who has now associated with him his two sons, while he has retained the names of his predecessors as the title of the firm. Very much has been done in the thirty-five years that have since elapsed to develop both the nursery and seed business, and Mr. Watt might point to the offices and to the nursery as instances in which radical improvements and extensions have been effected. The firm have in their own occupation and worked by them over 1,000 acres of land: 250 acres of this area is at or near Knowefield.

The entrance to the nursery is by a well-kept drive one quarter of a mile long, on either side of which are trees and shrubs of an ornamental nature. Many of these are stock plants of particular varieties, from which cuttings, buds, and grafts are obtained for use in propagation. Among Conifers we noticed an interesting specimen of Pinus Balfouriana about 15 feet in height, said to be one of the largest of this species in the country. Also a very distinct form of Cupressus Lawsoniana, of markedly spreading habit; Abies excelsa clanbrassiliana, suitable for cultivation on rockeries, owing to its extremely dwarf-growing character; and A. inverta, only 3 feet in height, but so unmistakably "weeping" that it, too, is among those species that may be grown among rocks or stonework and its effect be in keeping with the surroundings. Thuya dolabrata, Cryptomeria japonica var. spiralis, and Cupressus Lawsoniana lutea were all interesting in this portion of the nursery, the latter variety on account of the unusually good colour it had developed. In the portions of the nursery that may be described as the growing quarters, large breadths of almost every forest and ornamental tree may be seen. English Yews are grown remarkably well, and there were thousands of newly transplanted specimens that appeared in the best condition at the commencement of the winter. Of the number of Larches grown it is almost impossible to give numbers, for there appeared to be many millions. To those who are not familiar with the routine of raising forest trees, it may be of interest to know that Larch seeds are sown in May, in beds, and a few of those that make the most growth are transplanted after the first season. But only the "top growths," as they are termed, are thus treated, and the beds remain until the following season, when the remaining plants, having had more room, and another season's growth, are also transplanted. The Japanese Larch seems to find special favour in the Carlisle establishment, as many as two millions being raised this year alone. We were told that this species practically came unscathed through frosts which have proved disastrous to the European species. It grows more quickly, and if the plant or tree loses its leader it quickly forms another, which the European species rarely does.

Immense numbers of Corsican, Austrian, and Scotch Pines, also Spruce in its different varieties, attracted our attention, all being remarkable for their clean and strong growth. Some were what are known as "two year two" or "two × two" plants, which means that they were in the seed bed for two years, and have since been transplanted for an equal period, being four years old. "Two × one" would mean two years in the seed bed and one year transplanted. The Corsican Pine has to be handled skilfully, for it is not the easiest species to transplant successfully, but if the operation is done when the conditions of the weather are suitable and at the correct time the result is satisfactory. It is worthy of remark that the Scotch Pine, though the commonest species, has been in greater demand during the past year or two than the supply of good plants has satisfied, and the stock we saw at Carlisle was therefore regarded with satisfaction by the owners. We were told that the cones are bought from the Highlands of Scotland, and are treated in a kiln, specially used for the purpose by their own staff, where a dry atmosphere of a temperature at about 65° causes the scales to separate and seeds to become liberated.

Many of the choice varieties of Conifers, of course, have to be propagated by grafting, and an inspection of these plants, and of young stock of various kinds, in low pits, the sides of which were built of turf, was very interesting. The turf walls, being non-conducting, are looked upon with more favour than the material usually employed. Near by were young plants of Cupressus Lawsoniana Knowefieldensis glauca, for which a certificate was obtained in September last at the International Horticultural Show in Edinburgh. Some golden Yews were admirable examples of this highly decorative shrub, both in the English and Irish varieties. Of very many other trees and shrubs we saw, but of which specific mention cannot now be made, was a fine stock of seedling Oaks.

Roses are an important feature of the nursery, and about 40,000 to 50,000 plants are budded each year, in addition to the standards. There is a good stock of hardy fruit trees of the popular varieties, especially of such as succeed best in the North of England. The firm will distribute a new variety of Strawberry during the coming autumn. It is named "Bountiful," and is described as from a cross between Sir Joseph Paxton and Viscomtesse Hericart de Thury. It is recommended as an excellent main-crop Strawberry, and from the description we were given of its cropping qualities the variety may be expected to become very popular.

The glass houses cover a considerable area, and comprise in their stock well-grown pot Vines, Figs, &c., also flowering and foliage plants. Herbaceous and Alpine plants are also grown in large numbers. The nursery is divided up and re-divided by miles of Beech hedges, under 6 feet in height, which doubtless serve as good wind-breaks in this much exposed position, and so provide shelter for the plants.

CULTURAL MEMORANDA.

EUPATORIUMS.

THESE easily cultivated plants are deserving of attention wherever early spring flowers are in request. They succeed well in the cool greenhouse, and do not need, nor will they stand, forcing. Pot them in smallish pots in almost any kind of light soil, and as the plants are most abundant rooters, do not afford them a great number of crocks as drainage. From June to September the plants should be stood in a sunny plunging bed of gravel or fine coal ashes, and be well looked after in the matter of affording water at the root and syringing the leaves. When going out of flower cut back the older shoots rather severely, and afford the plants but little water for a few weeks, keeping them in a cold frame in a half shady place. Useful varieties are odoratum, riparium, and vernale. *F. M.*

ANTHURIUMS.

THE recent introduction of new varieties of the well-known Flamingo plant (Anthurium Scherzerianum) into cultivation has not only extended our list, but at the same time added to the value of all previously introduced stove plants suitable for decorative purposes. A. Andreanum album, in habit of growth and shape is a duplicate of the type, but the spathes are of a shining ivory white, continuing a long time in perfection, a delightful acquisition to our list of stove plants.

A. A. Roseum is of great value, the spathes being of a bright rose-pink colour, ornamented by a tri-coloured spadix, the basal portion being white, the centre golden, and the tip lemon-green. A. A. salmoneum produces cordate-shaped spathes of a clear salmon colour, the corrugation in the spathe being well defined. The basal half of the spadix is white, the apical portion yellow. A. A. sanguineum is a fine variety of the type, with rich, dark crimson spathes, ornamented with a golden yellow spadix, and shining as if varnished; the spathes are of good shape, and the corrugations are well defined.

A. Scherzerianum maximum produces flower spathes of intensely brilliant colour, measuring 9 inches in length and 4 in breadth. A. Scherzerianum roseum freely produces its well-shaped, beautiful, rose-coloured spathes that are flushed with salmon, a striking contrast to the rich scarlet spathes of the type.

A. S. Sanguineum is a very distinct variety. It differs from the type in the colour of its spathes, which are of a deep blood-red or crimson colour.

Owing to the enduring nature of the spathes the Anthuriums are desirable, as well as most attractive, plants for the embellishment of plant-stoves and conservatories, as they also are for room and table decoration. The Anthuriums mentioned above are easily grown. Young off-shoots, with few roots, detached from established clumps and potted up into well-drained 3-inch or 4½-inch pots, according to the size of the plant, in peaty soil, with which some pulverised potsherds have been previously mixed, will soon become established. Keep the crowns of the plants in the centre of the pots well above the rims of the receptacles, and make the soil fairly firm in potting. Place the plants in the plant-stove or in any structure in which a minimum atmospheric temperature of 65° is observed, and afford water to settle the soil about the roots. Shift the plants into one size larger pots before the roots become matted, using the peat in a rougher state, with the addition of silver sand at each succeeding shift. *H. W. Ward, Rayleigh.*

THE BULB GARDEN.

SOME BULBOUS IRISES.

SOME of the bulbous Irises are among the loveliest of our spring flowers, but unfortunately it is not in every garden that they will succeed. An ideal position for them is a sunny border in front of a wall, facing due south and sheltered from the north and east; but even in such a site they often fail to thrive, and die out in a year or two. A high authority on these plants attributes this failure to the use of leaf-mould in the compost, and recommends the use of pure loam mixed with a large proportion of coarse sand. Considerable difference of opinion exists on the question of lifting the bulbs after the foliage has withered, and replanting in the autumn. One eminent authority advocates this course, two other equally reliable experts advise the contrary.

Amongst the best garden species are:—

I. alata, sometimes known as the Scorpion Iris. —This is a very early-flowering species, generally blooming before Christmas. The blossoms are lilac-blue, veined with a deeper shade, the falls blotched with bright yellow. Diameter of flower, four inches; foliage leek-like. This is a very uncertain bloomer, in some gardens refusing to flower after the first year, though remaining in perfect health.

I. reticulata.—This is the commonest of the early-flowering bulbous Irises, and is a universal favourite. The standards and falls are of a rich violet shade, the falls bearing a deep golden blotch. The flower-stems are often over a foot in height, and the fragrant blossoms are from three inches to four inches across. There is a variety styled Major. It has larger blooms than the type, and usually flowers early in March.

I. persica.—This is a very dwarf species, often not more than two inches in height. The type bears pale, greenish-blue flowers with a yellow blotch on the fall, and margined with a wide band of deep violet, three inches in width. There are many named varieties of this species.

I. Histrio.—This is now held to be a variety of I. reticulata, though of very distinct appearance. Flowers purple-blue, falls bearing a yellow blotch and heavily spotted with violet. Diameter of flower 3 to 4 inches. This is now over, having bloomed in the first week of January.

I. histrioides.—Also a variety of I. reticulata. Flowers purple, marked with bright blue blotches and spots, the falls bearing a narrow yellow band. This also flowered early in January.

I. Heldreichi, now known as I. stenophylla, is a beautiful Iris, and one of the easiest to grow. The flowers are variable in colour. In the dozen or so blossoms now open considerable difference in tint occurs. In one of the handsomest forms the standards and falls are violet-purple with slight white veining round the yellow band on the fall, in others the standards are sky blue, and in still others the falls are lavender margined with violet. Diameter of flower 3 inches.

I. Rosenbachiana.—This is perhaps the most beautiful of all the dwarf bulbous Irises, but, as in the case of I. Heldreichi, it is very variable in colour. In one flower the standards are lilac-blue, deepening into crimson at the base, and the falls are terminated by a wide band of deep violet edged with white. In another the falls and the standards are maroon-crimson, the raised golden band on the former being margined with pale blue heavily spotted with violet. Diameter of flower 3 inches.

I. Danfordiæ.—A pretty little flower having bright yellow standards and falls, the latter bearing a narrow orange band surrounded by faint pencillings of purple. Flowers 2 inches across. This species is now in bloom.

I. Kolpakowskiana.—The colour of the standards in this species is lilac-blue, the falls being purple-red with a narrow band of rich yellow, and white veined violet at the base. Diameter of the flower 3 inches.

I. Bakeriana has bright lilac-blue flowers, the falls of which are white splashed with purple and edged with a broad band of the same colour. Diameter of flower 3 inches.

I. Tauri.—Standards dark blue, falls purple-black spotted with white around the central yellow band. Diameter of flower 3½ inches. It is in flower during February.

I. Warleyensis.—This is a member of the I. orchioides group. The standards are blue, as are also the upper portions of the falls, the extremities of which are terminated with a broad blotch of deep violet edged with white. Diameter of flower 3 inches.

I. pavonia.—This, though popularly termed an Iris, is not an Iris at all, its correct name being Moræa glaucopis. It flowers in summer, the flowers being whitish with a blotch of bright blue at the base of the falls. The spathes carry several flower-buds, which open consecutively.

In the same border with the Irises already named is growing a very different species, and one rarely met with in cultivation, namely, I. cretensis. This has been in flower all through the winter. Its blossoms are smaller and not so showy as those of I. stylosa or unguicularis, to which species it is believed to be allied. The standards are lavender coloured, and the greater portion of the falls is white veined with purple, while they terminate with a blotch of lavender-blue about half-an-inch in depth and edged with a narrow margin of white. The blooms are about 3½ inches across.

One other bulbous Iris I must allude to is growing in another part of the garden. This is I. tingitana, and I am convinced by experience that, whatever may be the correct practice with regard to the dwarf bulbous Irises, this species requires annual lifting. Many find it impossible to flower the Tangiers Iris, and I have known plants that have grown 20 years in a garden without blooming. In only one season have they failed to flower with me, and that was when I had neglected to lift them the preceding year. I lift as soon as the foliage has died down and replant in very rich soil at the end of October. A thick layer of rotten manure is placed about 9 inches below the surface, while old mushroom-bed manure is added liberally to the upper soil. The bulbs are planted 3 inches deep and are surrounded with sand. They generally flower in March, but I have had blooms as early as February. The blossoms are of lovely appearance and very large, often measuring over 6 inches across. The standards are violet-blue, and the falls a delicate French grey set off by the glowing yellow of the central blotch. *S. W. Fitzherbert, S. Devon.*

[Many of the species above named have been figured in these pages.]

KEW NOTES.

Interesting Hardy Plants in Flower.

Encouraged by the warm, bright weather that we have experienced recently, many rare and interesting plants have come into flower in the Alpine house. The Crocus family supplies the greatest proportion of colour, amongst the most conspicuous being C. versicolor, C. ancyrensis, C. Weldeni, in variety, and C. aureus. Chionodoxa also in its various forms helps to make the house bright, along with Cyclamen coum, Shortia galacifolia, and the double form of Adonis amurensis. The latter is a most interesting plant, with its curious flowers composed of yellow and green series alternately arranged. The Androsaces are represented by A. Laggeri and A. ciliata. One of the prettiest plants is Primula marginata, a native of the Alps of Dauphiny and Piedmont, with toothed, mealy leaves, and clustered heads of pale mauve-blue-coloured flowers. It is also one of the easiest of Alpine Primulas to grow at Kew, thriving well in the rock garden planted in a sunny fissure in the rock. There are also several Saxifragas in flower, including S. Elizabethæx. This is a plant of hybrid origin, having for its parents S. sancta and S. burseriana. It somewhat resembles the latter in general appearance, without the glaucous colour of the foliage, but is of closer and more tufted habit. Of very free habit, it forms cushions of dark green foliage, and bears pretty yellow flowers of the colour of those of S. sancta. It was raised by and obtained from F. Sundermann, of Lindau, in Bavaria about four years ago. Also in flower is S. Ferdinandi-Coburgi. This charming little species is a native of Macedonia, where it is found at high elevations growing in rocky fissures and forming neat tufts of somewhat silvery foliage. The flowers are bright yellow, succeeding buds richly suffused with red, and are borne on stems about 2 inches high. It is closely allied to the better-known S. aretioides, but comes into flower earlier, and promises to be easier to manage. Another hybrid Saxifraga in flower is S. Salomoni, a cross between S. Burseriana and S. Rocheliana. It is of compact habit and free growth, with tufted, glaucous foliage, like the smaller forms of the former parent. The flowers are more like those of S. Rocheliana, and are produced three or four together on pubescent stems about 2 inches high. The whole of the stem and buds are suffused with pink, making it a charming little plant. It was also raised by F. Sundermann, and has proved more hardy outside than S. Burseriana. S. scardica is a native of the Balkan Peninsula, among other places being found on Mount Scardus, in Albania, whence it receives its specific name. It is closely allied to S. Rocheliana, but comes into flower some time before that species. It also differs in its narrow, less spatulate leaves. Very free flowering both in the rock garden and in the Alpine house, it will probably become a favourite plant when better known, as its flowers are of good substance and last for a long time. It has recently been figured in the *Botanical Magazine*, t. 8,058, and was also sent out by F. Sundermann. Other Saxifragas in flower include the red-flowered Macedonian S. Grisebachii and S. porophylla.

On a sunny border at the foot of a south wall are some hybrid Irises of the bulbous section in flower, which were raised by C. G. van Tubergen, Junr. I. purpureo-persica, a cross between I. persica purpurea and I. persica, is a beautiful plant, with very large flowers, rich ruby-red in colour, with dark maroon falls and orange crest. It is evidently of robust habit, very hardy, and sweet-scented. I. sind-pur (I. sindjarensis × persica purpurea), with robust habit like the former, is very free flowering, producing several flowers to each bulb. The flowers are large and of good substance, dark lilac-mauve in colour, with a light yellow crest. It is a valuable addition to an already numerous but charming family of early-flowering plants. *W. I.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

The Royal Horticultural Society's Exhibition of Table Decorations, &c. Like "Decorator" (see page 140), I think the exhibition the Society is going to hold on June 20 should prove very interesting and instructive to those who have much of this kind of work to do and who may be expected to visit the show for the purpose of getting fresh ideas. The practice of decorating tables appears to be increasing continually, and the ability to do this well forms an important item in a gardener's qualifications. It is most unfortunate that the R.H.S. Council should fix the date for this show on the same day as that on which the York Gala Exhibition will be held, it being a pity that these two important shows should clash. The York Show has been held about the same date for many years, and cannot, I believe, be altered, as the Gala rules the date for the show, which must be well known to the Council of the R.H.S.—*Another Decorator.*

Fumigation with Hydrocyanic Acid Gas.—In spite of the danger this process entails, it is assuredly an advance in the right direction, and Mr. Dobson (see p. 85) is to be congratulated on his experimental efforts. For a number of years we were quite content to run the risks to ourselves and plants by using the now "time expired" tobacco paper and rag, and we all hailed with joy the advent of the solution of nicotine; and although this extract performs its work well, care is necessary in its application. The same will be required in the use of hydrocyanic acid gas, but I anticipate a reduction of 50 per cent. in the cost of fumigating. When this vaporiser can be placed upon the market in a portable and simplified form of application, gauged ready for immediate use, it will be generally used not only because it will be cheap, but because also it will be extremely effective. *W. H. Clarke, Aston Rowant, Oxon.*

The Late George Norman.—The note on page 155 contains some inaccuracies which ought not to pass uncorrected. He commenced at Colworth Hall, Sharnbrook, Beds., at that time the residence of — Magniac, Esq., M.P., the gardens being under the charge of Mr. McKellar. From this place he went to the Dell, Englefield Green, the seat of Baron Schroeder, the gardens being then—as now—under Mr. Ballantine's charge. Mr. Norman always referred in pleasant words to his stay there; he looked upon Mr. Ballantine with almost filial respect, and spoke very highly of Baron Schroeder as an example of a good and kind employer. After staying there a considerable time, during which he rose to be foreman, he took a journeyman's place under the late Zadok Stevens, at Trentham, where he had charge of some of the vineries. There was a great deal of work to be done at Trentham, but Norman never objected to work. Each journeyman had charge of his houses entirely, Sundays and week-days, without change, and was responsible to Mr. Stevens alone, as there was no foremen kept. Stevens did not mince matters. Norman has often told me he did not get a chance to put on his Sunday clothes for six months. He also told me of one man in charge of the early vines who had allowed the fermenting material on the border to get too hot. He was fetched out one Sunday morning and made to turn the whole of it over. But although the work was hard it was a good school for those who could stand it. After a time Norman's health began to suffer, and he spoke to Mr. Stevens about making a change. "Stop until I get my Strawberries potted, and I will recommend you to Mr. Harry Veitch," was the reply. He stopped as requested; but an attack of low fever, which laid him up for six weeks, was the result. He recovered, and on December 11th, 1873, came to Linton Park, Kent, as foreman. He soon made alterations in the plants and indoor fruit trees. Mr. Robson was head gardener, and left the houses entirely in Norman's hands. Table decoration was then a very important thing at Linton. Norman had good taste and judgment in arranging flowers. Lady Holmesdale was very pleased with what he did, and when a head gardener was required at Hatfield in 1876 she personally recommended him to the Marchioness of Salisbury. Hatfield Gardens were then in a very rough state. Several head gardeners had only stayed a short time—Mr. Record for about three years, then Mr. Bennett for another three years, a Mr. Thomson for one year. Then another one was engaged, but did not stay more than one night! I saw the gardens about three months after Mr. Norman took charge, and made a note in my diary at the time: June 26th, 1876—"Things rougher than in any garden I have ever seen." Nettles and thistles were growing all about the kitchen garden, and were higher than the fruit bushes in some places. Mr. Norman set to work with a will. He soon altered the appearance of things, and when I saw the place again in 1877 it looked very different, and has steadily improved ever since. Few people who are not acquainted with the place can have any idea what the work has been in carrying on such a large garden so well, under many difficulties, for thirty years. Mr. Norman has succeeded where several others failed. At one time a very strong man, he did not spare himself in any way, but did the work of two men easily. He had the satisfaction of knowing his work was appreciated by his employers, which was a great help to him. His thoroughness in all he did, and his conscientious, straightforward character stand out conspicuously. We shall miss his welcome face and sound advice at the Royal Horticultural Meetings. The Garden Charities will miss his untiring exertions on their behalf. His employers say he cannot be replaced. All his friends will miss him much, and none more than his old friend—*W. H. Divers.*

Unusual Flowering of Cœlogyne cristata.—I have just had the opportunity of seeing a fine plant of Cœlogyne cristata, and another of C. cristata var. Lemoniana, cultivated at Broomfield Lodge, Chelmsford, by Mr. Pragnell, which are now in magnificent flower for the third time within 13 months. The plants, which were originally in the possession of Mr. Warner, have been grown at the cool end of a stove for some years, being removed to the house when in flower and kept slightly dry for a short time of rest. Last March they bloomed profusely, again in the autumn of last year, and are now a third time covered with fine flowers. The unusual production of more than one good crop of blossom within a year has induced me to ask whether any readers of the *Gardeners' Chronicle* have noticed a similar thing, and, if so, under what conditions? *Fred Chittenden.*

Rhododendron præcox.—In the note upon the early Rhododendrons at Leonardslee, I observe the statement so frequently made about *R. præcox* that its height is 3 to 4 feet. I do not know what may be the limit of its height, but I enclose a photograph of one fully 7 feet high, taken in my own garden in Wigtownshire last January, when the bush was in full flower. It is a slow grower; this one was planted nearly 25 years ago, but it still increases a few inches in height every year. *Herbert Maxwell, Monreith.*

PHOTINIA SERRULATA.—At Pengreep, Cornwall, is a handsome specimen of this plant which has been in flower for the past seven weeks. It is one of the finest early-flowering sub-hardy plants that I am acquainted with, and in districts where the climate is suitable for its culture it is useful for furnishing a supply of cut flowers. The latter, which are borne on large corymbs, are pure white, and remain in a fresh condition for some days when cut. The young growths at this season of the year are red, and when seen at a distance might easily be mistaken for flowers. The specimen above referred to is 35 feet high and as much through. It is growing in rich loam, and appears to enjoy a sheltered, well-watered position. Further north than Cornwall or in an exposed position it would probably fail to develop its flowers successfully. A good effect is produced by planting Prunus Pissardi in the foreground with Photinia serrulata behind *H. W., Trevince.*

A DESTRUCTIVE BIRD.—The hawfinch does more damage to garden Peas than sparrows, slugs and mice combined. His wonderful dexterity in riddling Peas is remarkable. The species, I believe, is a native of Germany, but regularly visits this country every summer. The birds arrive in this locality at about the beginning of July, and are well known by their peculiar "Twit-twit," but more especially by their depredations among the Peas. They pierce the pods opposite the Peas with their powerful bills and take out the Peas, leaving the pod hanging like a piece of torn ribbon, and will go through the whole length of the rows in a very short space of time. Last year we had a flock of about a dozen, and they practically ruined all the early Peas, leaving nothing but riddled pods. I was obliged to resort to netting the main crop, with the result that I caught seven, two fine specimens of which I have at the present time in full song. Though I do not advocate the slaughter of this beautiful bird, it is absolutely necessary to take some means of precaution to safeguard the Peas. *Wm. Brooksbank, Coniston Hall Gardens, Bell Busk, Leeds.*

FOREIGN APPLES.—In reference to Mr. J. S. Fowley's note on p. 140, I may state that when living in the near vicinity of London I have had occasion to purchase many foreign Apples and have frequently met with bad ones, and with two cases in which 95 per cent. were bad and worthless, yet I paid the full and best price for selected fruit. It is well known that British fruit will soon decay if bruised. Great care should always be exercised in gathering and storing Apples, then decay is prevented. *W. A. C.* [On Saturday last we saw Apples in a fruiterer's shop which had the appearance of being covered with mildew. A closer inspection revealed the fact that they had all been coated with, presumably, a salt of copper. We purchased some of the fruit. On applying a test the identity of copper sulphate was confirmed. The shopkeeper informed us that the "stuff" was put on the Apples to preserve them from rotting in transit. Sufficient of the salt was in the depression round the stalk to cause inconvenience to adults, and possibly danger to children if eaten. We welcome and value these supplies of foreign Apples when we have none of our own, but we must beware of these poisonous coatings. —ED.]

APPLES.—The cry at the Fruit Committee is "still they come." Probably some 50 Apples, more or less of seedling character, have been shown on the Fruit Committee's table during the autumn and winter, and certainly no fewer than a dozen of such came up on February 13. It matters not that we have already 500 or more varieties in existence all named. Any moderate person might well imagine that 500 were ample. Had all the seedlings or assumed seedlings sent to the committee during the past 20 years, and not getting recognition, been named, the number might have been 1,000. There seems to be a belief abroad that, with all our existing fine varieties of Apples, there is still room for material improvement. If only the commendations of senders as written were to be credited, there is not only great room for improvement, but their special varieties have qualities which place them far ahead of any others now in commerce. There is evidently either great faith in personal estimates of Apple excellence, or very little in the capacity of the Fruit Committee to detect deficiencies. Yet these wonderful swans commonly turn out to be but ordinary ducks. Not a few are very handsome in appearance, indeed quite merit the term "beautiful." They would look so nice in a fruiterer's shop or on the dessert table; but the members of the committee are practically minded persons who look not to externals so much as to internal excellence, and when an otherwise handsome apple is tested, in how many cases is the flesh found to be dry or flavourless? At a recent meeting a sample of the Spice apple, far indeed from being handsome, was sent for the committee to taste. Although the fruit was almost ugly, and the flesh firm, it was juicy and rich flavoured. Will raisers of Apples not concentrate their efforts on securing flavour more and mere form or beauty less. Only a really remarkable variety now can be said to excel all others. If no better than others, of what value is it? *Pomona.*

ARUNDINARIA NOBILIS.—A fine specimen of this Bamboo is now flowering here, and several young plants taken from it three years ago are also in flower. According to precedent these plants are doomed, but as they are flowering thus early in the year I am hoping they will ripen some seeds, so we may not lose this beautiful species. *A. C. B., Pencarrow, Cornwall.*

A FRENCH MARKET GARDEN AT EVESHAM.—It will be remembered that in January of last year a number of Evesham market gardeners paid a visit to Paris to see for themselves the methods adopted by the French gardeners to produce Lettuce and other vegetables at a time when such delicacies are not usually to be procured. The Englishmen were very much struck with the efficiency of the system carried out by the Frenchmen, and studied with great interest the making of the seed bed which, after all, is one of the most important parts of the business. At the same time serious doubts were expressed as to whether it would be possible to adopt this plan in England with financial success, it being felt that the climate was too humid and also that it was not possible to obtain the same variety of Lettuce which the Frenchmen grew. Consequently, of the score or so of Evesham men who took the journey, only one has experimented since his return. [!] This is Mr. John Idiens, or rather the Avon Orchard Co., of which he is the leading spirit. Mr. Idiens was most enthusiastic about the matter, and on his return he at once set to work to lay out a garden on the approved French plan. He procured the services of a practical Frenchman from Vitry, and under his directions somewhere about two acres on the Bengeworth side of the river Avon at Evesham have been laid out in the approved French way. I had the opportunity of going through this garden last week and was very much struck with what I saw. I might have been back at Vitry again, everything is so French. There are the low glass frames, and the cloches, and all the implements which are to be seen about looking strange to an Englishman. The seed bed has been prepared as it is done in France, but, of course, the soil has not got into the best condition after only one year's working. It may be as well perhaps to briefly state how this important work is carried out. All the top soil is first of all removed from where the frames are to be placed, and a good thickness of stable manure is put here to be covered with a coating of last year's soil. As soon as the crops have been marketed, the soil and manure are removed, made up into ridges and allowed to rot till the following year, when this forms the soil. As a consequence, every year the soil used becomes more fertile. It says a good deal for the natural productiveness of Evesham land that such excellent results have been produced in this garden after one year's working. Messrs. Watkins and Simpson, the head of which firm, Mr. C. D. Mackay, was mainly instrumental in organising the Paris trip, soon procured the right Lettuce seed, and when I visited the garden the other day they were marketing Lettuce of good size and excellent quality. These have been on the market now for at least a month and are still selling at 1s. 6d. a dozen. As in Paris, these Lettuces are in various stages of growth, and as soon as one lot is cleared another lot will be ready. Those that are being marketed are Cabbage Lettuces, but it will not be long before some Cos varieties, which are under the cloches, will be ready. In the same frames Radishes are being pulled, and these have made up to 3s. a dozen bunches. Of course Radishes grown in the open will not be on the market for some little time yet. The French foreman is very pleased with the Lettuce he is now cutting, and assured me that no finer quality Lettuce was to be found in France at the present time. Turnips, Carrots and Cauliflowers are also in various stages of advancement in the same frames and will soon be ready. As to Cauliflowers, the foreman told me, he should have first-class ones ready early in April. That hardly looked likely when I saw the plants last week, but he was certain that he should accomplish it, and we shall see. Tomato-growing is a special hobby of his, and he had some last year grown in the frames as early and as good as those grown in glasshouses after the expenditure on artificial heat. All the heat he gets is from the manure. The Tomato seed he plants in a cool frame, and then he transplants three times into heat. Every time he shifts the plant he removes a certain portion of the root, and by so doing he assures me that he gets a stronger, although shorter, plant, and that the fruit comes to maturity much earlier. He gave me a practical illustration. He took a small plant from one of the frames, and this particular plant had three what may be called "spur roots." He pinched off the root so as to leave only one of these spurs and then replanted. The next time of moving he will remove more of the root. Cucumbers are grown extensively in the frames, and last year they sold exceedingly well, and were quite as early as the greenhouse variety, and were also as straight and free from discoloration. The foreman told me that Frenchmen laugh at the idea of using artificial heat for the cultivation of Tomatos and Cucumbers. Melons were tried last year with great success, and are to be grown again this year on a larger scale. Many gardeners of the district and from long distances have been to see the result of the experiment and express themselves as very much impressed. Some of the principal men of the Toddington Orchard Co. have paid more than one visit to the garden, and I am told that the system is to be given an extensive trial in these plantations. The way the Lettuce and other vegetables are sent into market is an object lesson to local growers. I saw them packing Lettuces, which are placed in small shallow crates carrying two dozen, a dozen in a row, and between each row paper is placed. There is no crushing, and the Lettuces travel to their destination most securely, and come out of the crate ready to go on the table. It is the same with everything else sent away from here, and there is no "topping." With regard to the question of climate, I enquired from the Frenchman most closely as to whether he found more humidity here than in France, and therefore a greater tendency to "damp off." He assured me that there was no more tendency to this in Evesham than at Vitry. The climate of the two countries, he said, was very similar, but he added that Evesham has not so much sun as Vitry. The land, too, is first class, and he hopes in the course of another year or so to have a seed bed of which any Frenchman would be proud. There is no lack of stable manure, and while he can obtain that he has no fear of the result, but, as he told me, "No muck, no Cucumbers." I am going to watch the progress of the garden closely for the remainder of the season, and will keep you informed of what is going forward. *H. H. S.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

MARCH 6.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair); Dr. Somerville; Rev. W. Wilks, M.A.; Messrs. Worsley, Worsdell, Massee, Michael, Odell, Gussöw, Saunders, Veitch, Hooper, Douglas, Bowles, Holmes, and Chittenden (hon. sec.).

Mealy Bug on Bananas.—Mr. SAUNDERS reported that the mealy bug on Bananas from Jamaica, shown by Mr. Worsley at the last meeting, appeared to belong to the same species as the commonest of our greenhouse mealy bugs (Dactylopius longispinus, D. adonidum, or Coccus adonidum).

Grubs in Ash Stem.—Mr. SAUNDERS also reported that the Ash shoot from Dunmow, shown at the last meeting, had been bored "by one of the small fossorial Hymenoptera, probably one of the many species of Crabro. These insects fill the cells which they make with insects to supply their grubs with food. Having formed the cell and duly provisioned it, the female lays an egg in it and seals it up and forms another just above it, treats it as she did the first, and goes on in this way until she has completed her task. In this instance one of the grubs had died before it had consumed its stock of provisions, and the cell was more than half-full of the remains of a number of small Dipterous flies; from the other cells the perfect insects had made their escape, and the cells only contained empty pupa cases."

Variation in Narcissus, var. princeps.—Mr. E. H. Jenkins, of Hampton Hill, sent specimens of this well-known Narcissus having the corona contracted at the mouth. Dr. Masters said this condition was due in all probability to the plant having received some check during its development, but exactly at what stage and from what cause was not apparent. The specimens differed from the typical Princeps in being paler, both in the corona and perianth, but as Mr. Jenkins pointed out, the height, flimsy perianth segments, flat stem and leafage, were unmistakeably those of N. Princeps. He also said that he had been able to select from those he had grown two pale yellow selfs, another with segments almost as white as in Horsfieldi, another having much bigger bulbs than is usual in N. Princeps, and still another which retains its foliage when all others have disappeared; all these being apparently sports from N. Princeps. In addition to this, a sport has been selected having a frilled rim to the corona; this has proved constant and the stock is increasing.

Oranges Decaying.—Mr. Chittenden reported that some Navel Oranges had been received from the Western Orchards Produce Co., with the request for some information as to the cause of the rot that had set in. He had reported that the Oranges are attacked by the fungus Penicillium, a frequent cause of loss with Oranges. The trouble usually appears after the Oranges are packed and on their way to England, and this appears to have been the case with those sent. Navel Oranges are very frequently attacked, the open eye of this fruit forming a convenient place for the entry of the minute fungus spores; sometimes, indeed, they are infected before they leave the orchard, but more frequently in the curing house. After packing, the disease may spread throughout a box from one fruit to the next.

The conditions for the growth of a fungus such as this are, particularly, the presence of moisture, warmth, and a suitable substance upon which to grow. In the Navel Orange, a drop of water will often condense in the open end and there the fungus finds a very suitable place for growth.

The best means of preventing the growth of the fungus in the fruits appear to be as follows:—(1) Wrapping fruits in tissue paper, a means which combined with some amount of ventilation in the boxes, has proved, within certain limits, valuable as a preventive of decay. (2) Careful destruction of decaying fruit (by deep burial or by fire) in the orchard or the packing house, since by this means the number of spores likely to be floating in the air will be greatly reduced. (3) This should be combined with disinfection of the packing houses, either by thorough drying, by whitewashing or by burning sulphur therein.

Galls on Bramble.—Dr. Masters showed on behalf of Mr. Nicholson galls on Bramble very similar to those shown at the last meeting on Ash and Birch, and caused, like them, by a species of mite, Eriophyes.

Palm Leaves Diseased.—Dr. Masters also showed some leaves of a Palm apparently attacked by a fungus which Mr. Massee took to examine.

Primula sinensis malformed.—Mr. Odell showed specimens of this plant (intermediate between the "stellata" group and the ordinary sinensis) having green or purple flowers in which the calyx had become foliose, the ovary had grown into a tube, but contained no ovules, while the stamens were present. Dr. Masters took them to examine further, and will report upon them at the next meeting.

Pelargonium Leaves Diseased.—Mr. Massee said that the leaves Mr. Worsley had shown at the last meeting were not attacked by a fungus, but that the brown spots upon them had evidently been produced by a concentration of water at these points owing to an interference with proper transpiration. Chlorosis had also occurred. It was found that watering with a 1 per cent. solution of sulphate of iron and the standing of the plant in abundant light would cause growth to proceed in a proper and healthy manner.

Beetle Grubs in Elm Bark.—Lieut.-Col. Rogers sent Elm bark bored by the grubs of a beetle, which Mr. G. S. Saunders took to examine further.

Hardy Eucalyptus.—Messrs. Treseder & Co., of Truro, sent branches of a Eucalyptus from their nursery, an introduction from Australia, which they say has stood 20° of frost without injury. Some account of the tree is given in *Gardeners' Chronicle* (July 1, 1905, p. 3), with a figure of the young state, which is somewhat like that of E. cordata. Messrs. Treseder have coined the name Eucalyptus Beauchampiana for this form, but is is probably referable to E. cinerea, F. v. Muell, see Bentham "Flora Australiensis," iii., 239 [E. pulverulenta is closely allied, if not identical]. In the mature state the leaves are linear lanceolate, of a glaucous green with a reddish tinge and about 3 inches long.

Soil Uncongenial.—A sample of soil with roots of plants quite dead or dying was received. On using the soil a second time after rest, it was found that the roots of Cucumbers, Melons, Violets, Tomatos, Roman Hyacinths, etc., were quite destroyed. Mr. Chittenden said he had tested the soil, and found that it contained abundance of lime, so that the death of the roots could not be put down to soil acidity. Mr. Douglas pointed out that there were pieces of clinker and cinder in the soil, and the presence of these suggested sulphur as a possible cause of injury.

Cultures of Nodule Bacteria.—Mr. Chittenden said that experiments had been carried out in Essex during the past year with cultures of nodule bacteria from America and Germany on Beans, Peas, Lucerne, Clover, etc., but in every case without yielding any increase in crop either in pot cultures, or in the field, in spite of the fact that in every case the cultures were proved by means of control cultures to be alive and capable of vigorous growth. Dr. Somerville said that this had been the experience throughout the country, just as it had with "nitragin" a few years ago.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

March 12.—The annual general meeting of the above society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on the above date. The general business was preceded by a special meeting, presided over by Mr. H. B. May, to consider the adoption of the new rules as revised by the committee. The recommendations of this body were accepted with slight alterations, arising from the recommendations of the actuary in his quinquennial valuation. The actuary, in his report, also said in regard to the weekly grants paid from the Benevolent Fund, "7s. and 8s., as at present granted, are too high, and I would recommend that the allowance should in no case exceed 5s. weekly to every member coming on the fund in future." It was decided by the meeting to retain the rule as at present, which reads, "not more than 8s. per week." Mr. May was again elected to the chair at the meeting held at 8 o'clock, about 40 members being present. The report and balance-sheet were presented, and of these we give the following extracts:—

Extracts from the Report of the Committee for 1905.

"Each year the society increases in usefulness, as it also does in numbers. Financially the society is sounder than ever, and its membership is such as to give the committee and members the greatest possible encouragement for continuing and extending their efforts to induce gardeners to join early in life and secure to the full the many advantages the society offers.

"For several years the annual addition of new members was about eighty, and once ninety was reached, but during the past year no less than 120 new members were elected, by far the largest number elected in one year. The losses during the same period consisted of ten deceased and twenty-three lapsed members, the net increase being therefore eighty-seven, leaving the total membership at the end of the year at 1,163.

"In sick pay the sum of £401 17s. was paid out during the year, while payments from the Benevolent Fund amounted to £134 4s., and from the Convalescent Fund, £3 10s. The sick pay deductions amount to 8s. 4d. for higher scale members, and 5s. 6d. for lower scale members. Eighty-nine members received sick pay; ten members received assistance from the Benevolent Fund, and three from the Convalescent Fund during the year.

"The sum of £2,200 was invested during the year, and in this connection the committee wishes to once more record its high appreciation of the services so long and ably rendered to the society by its treasurer, Mr. James Hudson, V.M.H.

"The annual dinner was again a success; it was held at the Holborn Restaurant, and presided over by William Marshall, Esq., V.M.H., who did more than any one other person to found the society.

"After long and careful consideration by the committee, and with the kindly assistance of W. A. Bilney, Esq., the rules of the society have been revised, and placed in better order relative to each other, altered in some cases, and slightly added to. It is hoped that, subject to confirmation by the special general meeting and the Registrar General, these rules will serve for many years to come. It is also believed that the opportunity the alterations afford for a member to draw upon his deposit account to a limited extent under special circumstances, and the transfer of chronic sick cases from the Benevolent Fund to the Sick Fund—the chief alterations—will in the first place be an additional inducement to young gardeners to join, and in the second be the means of further strengthening the fund that provides for infirm old age.

"During the year, in fulfilment of the requirements of the Friendly Societies' Act, the quinquennial valuation of the society was taken. The valuation was again made by Mr. Thomas G. Ackland, and his report will be printed and circulated in the society's usual annual publication. But one or two sentences in the valuation report are deserving of special emphasis. Mr. Ackland points out that according to the actuarial tables, £3,590 should have been paid for sick benefit during the previous five years, whereas the amount actually paid 'was £1,531, or about 43 per cent. of the expectation. The remarkably light rate of sickness thus shown doubtless arises from the healthy occupation of the members, and from their careful selection; and the society is to be congratulated upon the result.' Referring to the Benevolent Fund, Mr. Ackland points out that if half the members estimated to reach the age of seventy years 'come on the fund, the continuous allowance should not exceed 5s. weekly,' and he urges that no higher allowance than 5s. per week should be granted in future.

"Mr. Ackland heartily commends the gradually increasing Depreciation Fund, and recommends that every effort should be made to raise it to an amount equal to the difference between the nominal and the market values of the stocks in which the monies of the society are invested. £26,800 is now invested, which averages over £20 per member."

The chairman complimented the members upon the sturdy independence shown by them in not relying upon the nation for old age pensions, but in providing their own.

The adoption of the report and balance-sheet was carried unanimously. Messrs. Winter, Hemsley, and Hawes, the three retiring members of the committee, were all re-elected, while Mr. Frogbrook was selected to fill the place of Mr. Kelf, who wished to retire.

Mr. William Collins was again elected secretary.

SOCIETES ROYALES DE FLORE ET LINNEENNE.

Brussels, February 18.—The last meeting was held on the above date, 29 members of the jury being present, amongst them M. Truffaut, from Versailles, and the two French Orchidophiles, Messrs. Le Moinier and Fanyan.

Four Diplomas of Honour, 49 certificates, and 17 honorary mentions were awarded, and several Orchids will be painted for the stud book.

We may also mention Debregeasia velutina, an extraordinary plant in full bloom, Cynorchis Kewensis, exhibited from the Brussels Botanic Garden; also Pteris Grevilleana variegata, Pteris generosa, from M. Draps-Dom. *L. G.*

SHROPSHIRE HORTICULTURAL.

(ANNUAL MEETING.)

MARCH 2.—At the annual meeting of this society, held on the above date, the committee had another marvellous year's record to add to their already remarkable list. The total receipts from the great floral fête in The Quarry this year reached £5,238 6s. 11d.—a record, the highest sum taken hitherto being £5,001 in 1902. The Mayor (Councillor R. E. Jones) was voted to the chair.

The report stated that the first day of the summer show in August proved very wet, and there was a falling off in the amount taken at the gates. The second day fully made up for it, and resulted in the highest amount taken in a period of thirty-one years, the total receipts from all sources amounting to the large sum of £5,238 6s. 11d. against those of 1902, hitherto the largest, £5,001 15s. 5d. The following figures in explanation will be interesting:—Subscriptions, 1905, £507 2s., against £433 18s. in 1902; cheap tickets, £539 18s. 2d., against £428 11s. 4d.; first day gates, £873 7s. 4d., against £1,004 16s. 3d.; second day gates, £2,229 18s. 3d., against £1,918 5s.; sundry receipts, including interest, £1,148 1s. 2d., against £1,216 4s. 10d. The entries received in the classes for horticultural exhibits reached nearly 3,000, being some 200 in excess of any previous year, thereby necessitating an increase in tent accommodation. The society enjoyed the happy position of always having made a profit, and never once a loss since its formation in 1875. The committee had had under consideration the present position of the society with regard to their landed and other property, and were now being advised as to the best course to adopt.

The balance sheet showed a profit on the summer show of £1,020.

Alderman Peele moved the adoption of the report and balance sheet, which was carried unanimously. He congratulated the members on the strong financial position of the society and, amid cheers, recalled the contribution the society made last year of £1,000 towards the purchase of the Priory property that had been added to The Quarry grounds, an improvement, said Alderman Peele, that he had no doubt the public would appreciate.

Mr. Peele moved, amid applause, the election as president of Mr. Alfred Darby of Little Ness, the new high sheriff for the county. Mr. Darby had been an exhibitor at the show for many years, and took a keen interest in it.

Mr. J. D. Southam touchingly referred to the death of their friend, Mr. William Phillips, who was their treasurer from the time of the starting of the show. He moved that Mr. Phillips's nephew, Mr. Wm. Phillips, be elected to the vacancy. In the death of Mr. Phillips, their late treasurer, the society had had a severe loss. Mr. Wm. Adams seconded the motion which was carried.

The retiring members of the committee, together with the Mayor were all re-elected.

Messrs. Adnitt and Naunton will continue to act as honorary secretaries.

The total takings of this society, since its first show in 1875, amount to £93,797 15s. 7d., and the list of donations to various public improvements and monuments in Shrewsbury reaches the munificent sum of £8,530.

COVENTRY CHRYSANTHEMUM AND FLORICULTURAL.

MARCH 9.—The Coventry and District Chrysanthemum and Floricultural Society held its annual meeting on the above date, the Mayor (Ald. A. H. Drinkwater) presiding. The annual report stated that the committee had the satisfaction of recording the fact that the last exhibition was the best ever held. The show was held in the Baths Assembly Hall, which lent itself admirably for the purpose. The committee regretted to report there was a slight falling off in the balance. This was accounted for by several circumstances, among them being a change in the place where the show was held, the fact that the subscriptions were less than in the previous year, and the prize money being more than usual. The balance-sheet showed that the amount brought forward from 1904 was £12 6s. 4d., and at the end of 1905 this had decreased to £7 5s. 6d. The subscriptions amounted to £46 16s., and the cash taken at the doors and from tickets sold was £47 10s. The prize money totalled £54 11s. Mr. W. T. Browett was elected treasurer, and Mr. W. T. Brown, secretary.

Obituary.

JAMES ALLEN.—It was with deep regret that I learned through a letter from Miss Allen that Mr. James Allen, of Highfield, Shepton Mallet, died there, at an advanced age, on March 8.

Mr. Allen was for many years interested in Snowdrops, and by hybridising and selection he has given us many remarkably beautiful varieties of these early flowers. His work among the Snowdrops has long been well known, and the paper he read at the Conference of the Royal Horticultural Society in March, 1891, attracted considerable attention. It was about that time that I had the pleasure of entering into correspondence with Mr. Allen. The last communication I had from him, in his handwriting, was a long and valuable pencilled note containing his observations upon some of the flowers of his raising and selection. This was in 1903, and is the last of a long series of deeply interesting letters in my possession which tell much of his work, and which reveal his true love for, and knowledge of, his flowers. I am also the fortunate possessor of a number of his flowers, although Snowdrop disease and my removal from Carsethorn cause me to regret the loss of some choice plants.

Although Mr. Allen's work is best known through his Snowdrops, he improved other flowers. A series of Anemones, derived directly or through the variety Robinsoniana from Anemone nemorosa, will, in time, keep Mr. Allen's memory even fresher than his Snowdrops. One may mention as two of the best A. n. Alleni and A. n. Romance, while there are several others of great beauty. In Scillas also Mr. Allen worked to secure good red varieties of S. bifolia. One of these is called Pink Queen and another is Pink Beauty, both of which are very fine of their kind. A pretty white variety, much superior to the ordinary white form of S. bifolia, was also raised. The hybrid Chionoscillas he raised are very beautiful also. Crocus iridifolius in his hands yielded some fine varieties of the type of C. iridiflorus major, and a selected Erythronium called "The Queen" is the best of the Dens-Canis varieties we have. Mr. Allen also selected several Narcissi. All this was done for pure love of flowers, for Mr Allen was a man of considerable means who carried on this work for pleasure alone. He was a delightful correspondent, and, clouded though his last years were by illness and helplessness, his cheerfulness was wonderfully maintained. But a short time before his illness took a more acute form, Mr. and Mrs. Allen celebrated their golden wedding. All who had the pleasure of Mr. Allen's acquaintance will join with the writer in expressing their deep sympathy for his widow and family. *S. Arnott, Sunnymead, Dumfries.*

HENRY ERNEST MILNER.—It is with great regret that we have to announce the death, on the 10th inst., in his 61st year, of this gentleman, at Gipsy Hill, Norwood. He was the distinguished son of a distinguished father, and an admirable representative of English landscape gardening. With vast experience at home and abroad, he combined good taste and judgment, knowing how to make the best of the conditions afforded him and how to adapt his plans to the surroundings, for, as he said, "fitness to surrounding conditions is a measure of beauty to both." In this way he avoided the extremes of the formalists and the occasional incongruities of the picturesque designer. "It is the province of the landscape gardener," says Mr. Milner in his classical work on the "Art and Practice of Landscape Gardening," "to appreciate the multitudinous means whereby Nature expresses her beauty, and so to use those means artistically as to arrange their force for producing the delightful result he desires to achieve. To servilely copy Nature's forms is to incur the pettiness of mere reproduction in little, with the penalty of a falsification. To utilise her means and to let the spirit of her works influence her art in every practicable way is the true practice of the art of landscape gardening." By many of our readers Mr. Milner will be remembered for his connection with the Earl's Court Exhibitions in 1892, where he came in contact with many gardeners and others who quickly learnt to appreciate not only his skill but his charming personality. Mr. Milner was one of the first upon whom the Victoria Medal of Honour was conferred, so that his death leaves a vacancy in the ranks of the distinguished company entitled to call themselves V.M.H. Mr. Milner was of Derbyshire extraction, his father having been associated with Sir Joseph Paxton at the Crystal Palace and elsewhere. Among the very numerous English gardens constructed or remodelled by him we may mention Bagshot Park, Friar Park, Paddockhurst, the Buxton public gardens, as well as works in Hungary and Sweden.

The management of the business in which Mr. Milner was interested has been for some years in the hands of Mr. E. B. Milner and Mr. Edward White, and will be continued by them.

WILLIAM SOWERBY.—Many of our readers will hear with regret of the death of William Sowerby, for many years Secretary of the Royal Botanic Society. Deceased, who died on the 9th inst. at Gardenhurst, Ware, was the son of John E. Sowerby, and inherited the family talent for draughtsmanship.

MR. THOMAS KENNEDY NEWBIGGING.—It is with regret that we have to announce the death of Mr. Thomas Kennedy Newbigging, the head of the firm of Messrs. Thomas Kennedy & Co., nurserymen and seedsmen, Dumfries, which sad event took place at his residence, Stewart Hall, Dumfries, after a short illness. Mr. Newbigging was in the prime of life, and his death will be a surprise to many, as, although not very robust in late years, he was looking well and was transacting business as usual until lately. He was attacked by pneumonia, and succumbed to it early on the morning of March 14.

Mr. Newbigging was well known to a wide circle of horticulturists and others, although for long his attention was much taken up with the extensive farm seed department of the business, until the death of his brother, Mr. John Newbigging, which was recorded in these pages last April, compelled him to exercise a supervision over the other departments, a duty he performed with his customary energy and ability.

The business of which Mr. Newbigging has latterly been the sole member has been for many years the leading one of its kind in the south-west of Scotland, the various departments of the nursery and seed trade being all of an extensive character, forest trees, ornamental shrubs, and other nursery stock being growni n great quantities Originally established by a relative, the business was for long carried on by the late Mr. Newbigging, father of the now departed gentleman, and Mr. Robert Cowan, who again were succeeded by Mr. T. K. and Mr. J. Newbigging, descendants of the original founder of the firm.

Although somewhat brusque in manner at times, he was of a genial and social disposition, and was a favourite with all who knew him. Mr. Newbigging is survived by his wife and several young children, and general sympathy will be extended to them in their bereavement.

NATIONAL FRUIT GROWERS' FEDERATION.—The monthly meeting of the Council was held at the Royal Horticultural Hall, Vincent Square, Westminster, on Monday, the 12th instant. Col. C. W. Long, M.P., presided. Important correspondence on the subject of rebates on large consignments of fruits and vegetables on the Kentish lines having been read, it was decided that all members concerned should be made acquainted with the conditions under which they can obtain the reductions of 10 and 15 per cent. The question of how best to further the carrying out of the recommendations of the Departmental Committee on Fruit Culture was discussed at length, and finally it was decided that a deputation to the Board of Agriculture should be arranged, and that the selection of points to be specially urged should be the principal subject of discussion at the annual general meeting in May. The Bill which has been drafted by the Joint Railway and Parliamentary Committee was briefly explained by the Chairman, and many of its provisions were highly approved. The next Council meeting was fixed for Monday, April 2nd, at 2 p.m.

ENQUIRIES AND REPLIES.

Pinus Malletti.—In answer to an enquiry as to this Pine, February 3, p. 80, I may say that it is in my opinion nothing but a robust form of P. ponderosa. The history of the plant, so far as it is known, is given in my "Conifères et Taxacées" (1902), p. 186, and was based upon information given me directly by Baron Mallet of Jouy en Josas. *S. Mottet, Verrières le Buisson.*

ANSWERS TO CORRESPONDENTS.

Acalypha: *Dulwich.* The leaves are affected with a scale like mealy bug. Treat the plants as you would do to rid them of mealy bug.

Calceolarias: *P. A.* We suppose you mean Calceolarias of the shrubby section, and such as are generally used for bedding out. The usual method of propagation is by cuttings, but if seedlings are raised the seeds are generally sown in February, in a frame or greenhouse. When planting them in the open put them in good soil that has been enriched with well-rotted manure, selecting a half-shady position.

Clover: *C. G.* The Clover is killed by the fungus called Sclerotinia trifoliorum. The disease comes under the designation of "Clover sickness." The little black lumps on the root are sclerotia. These remain in the ground and infect plants the following season. In fact, they are known to retain their vitality for four years. Deep ploughing is useful, because it buries the sclerotia and destroys them. No leguminous crop should be grown on infected land for four years afterwards, and weeds belonging to the same natural order should be kept down.

Commercial Gardening: *A. P. B.* You ask us what branch of market gardening is the best to take up: the growth of plants, flowers, fruits or vegetables. Also, what amount of income you could expect from each, and the capital that would be required to commence with. You omit to state in what part of the country you thought of settling, what size nursery you expected to purchase, and we have no means of estimating the business capacity you possess; but instead of giving us such information, you enquire where you may obtain what professional experience would be necessary! In these circumstances we can offer you very little advice. If you are a young man (you do not state your age) and have serious thoughts of entering into the field of commercial horticulture, let no time be lost before getting employment in a first-class market-garden, where indoor and outdoor crops are cultivated, and, after you have gained some practical experience as a gardener and an insight into the general methods of market-gardening, it will be sufficient time for you to choose of which class of culture you will make a speciality. Some amateurs have succeeded exceedingly well as market-growers, but the practice of embarking in a profession or trade without sufficient practical experience is at least dangerous, and its adoption may lead to financial ruin.

Crocus: *Mrs. S. E.* Yellow Snowdrops do occasionally produce seed, but why they are less fertile than other varieties we do not know. Souvenir de la Malmaison Carnation being so double could hardly be expected to produce much pollen, or perhaps always a pistil, but hybridisers have, we believe, succeeded in crossing this section with other sections of Carnations, for there are now many varieties. The hybridiser, however, can make successful use of means that, if unaided, would not be sufficient to bring about fertilisation.

Dendrobium Wardianum Buds Immatured: *A. E. M.* Several causes may produce similar bad results. As a rule, buds go off in that manner if the plants are kept in an atmosphere that is too hot, close, and moist after the first flowers begin to expand. Such treatment is conducive to growth for the next year, and consequently detrimental to the flowers. The plants require a tolerably dry atmosphere while expanding the blooms. Watering overhead or syringing will sometimes produce the bad results complained of. So will bad gases in the air, such as might arise from drains, or a gas-stove, or from the plants being in close proximity to the hot-water pipes.

Douglas Fir: *W. G.* The appearances are consistent with some faulty detail in transplanting; but we will let you know more fully later on.

Fruit Trees and Canker; *M. M. N.* Old lime rubble is excellent material for mixing with turf used when planting fruit trees, and we do not think a layer several inches deep if put at the bottom of the holes would have a bad effect, especially as older trees in the same garden suffer badly from canker. At the same time, much depends upon the conditions under which planting is done. If it is a clay subsoil through which water can scarcely pass, the layer of mortar rubble would be likely to collect and hold the surplus water from the surface soil, and unless means were taken to prevent the roots getting into this water holding rubble, harm would certainly be caused them. The better plan in such a case would be to carry out a system of draining with a pipe leading from below each tree into larger pipes laid in the centre between the rows of trees. Having thus placed drain pipes on the clay to take away the water as it accumulates, and rough mortar rubble and other good drainage material between the roots of the trees and the water pipes, the soil about the roots will be kept in good condition and the roots confined to a thoroughly drained area. But if the subsoil is porous, then the use of the rubble may have good results, and in any case it will not affect injuriously the quality of the fruits.

Grafting Vines: *Anxious.* March is the best month in which to graft the Vine. Make a careful selection of the scions, choosing those which are hard, well ripened, and contain but very little pith, as success will much depend upon the quality of the scions. If the operation is to be done on one of the spurs, this spur should have been left sufficiently long for the purpose. The scion ought to be of about the same size as the spur. Whip grafting is the better method to employ, and the union of stock and scion should be made to fit perfectly. Secure these together firmly, either with budding cotton or raffia. In order to prevent possible bleeding cover the operated part with a dressing of notting or grafting wax. The operation will be the more successful if the point of union is clayed over in a similar manner to that generally adopted when grafting is done out of doors. The parts can afterwards be kept at an equable temperature, and the clay prevented from cracking by a covering of moss secured in position with string, and kept in a moist condition by occasional damping.

How to Become a Pupil to Florist: *S. F. D. H.* We imagine it would be quite easy to obtain such a position, but you must first advertise the fact that you are anxious to fill a vacancy of the kind. Scan the advertisement columns also, for occasionally florists have some difficulty in meeting with suitable apprentices.

Lawn and Flower Border: *K. A.* It is frequently the case that small lawns in more or less confined areas in towns cause their owners considerable trouble, and the conditions being quite unsuitable for the growth of Grasses the result is not surprising. We have found that it is best to make up one's mind to sow seeds every spring, and if this is done, and every care taken afterwards to encourage the Grasses, the lawn may be made to appear in first-class condition, at least during the summer and autumn months. Cut the Grass rather close, then apply a thin top-dressing of light soil to which has been mixed a little nitrogenous manure. Rake this over evenly and roll it moderately hard. When this has been done sow seeds at the earliest opportunity wherever the Grass appears to be thin and cover very thinly, or not at all, as may seem desirable. In urban gardens the Sparrows are usually so daring that a slight covering over the seeds is to be recommended. The position you describe appears to be very unsuitable for Roses, which certainly require sunshine. If the sun's rays do not reach the wall at all you had better plant varieties of Ivy. The border may be planted with strong-growing herbaceous plants, as Phloxes, Dahlias, perennial Asters (Michaelmas Daisies), Anemone japonica, perennial Sunflowers, Solidagos, &c. In the summer the effect could be further brightened by planting a few tender bedding plants where there is room for them.

"Loco": *R. C. H.* The "Loco" is Astragalus mollissimus. We do not think the poison is a quality possessed by the plant itself, but is a ferment developed in it from force of circumstance.

Muriate of Potash: *E. S.* This form of potash is very extensively used in America for applications to fruit trees, but it has not found so much favour in England, the fact being that it is a chloride, and so sets the lime of the soil free, which thus gets washed away by heavy rains or artificial waterings. For soils that are deficient in lime (chalk) muriate of potash is not to be recommended, unless lime in some form be also added. As your soil is stated to be a "rather heavy garden soil," presumably containing a considerable amount of clay, and not, therefore, altogether deficient in lime, you may be recommended to use a manurial mixture of three parts of basic slag and two parts of muriate of potash for your Apple or other fruit trees. Apply 8 ounces of the mixture per square yard, distributing the manure for about 3 or 4 feet from the trunk of the trees, and well fork in. If there is any doubt as to a sufficiency of lime in the soil, use sulphate of potash instead of the muriate, and in the same proportions, and with the basic slag. If any difficulty exists in procuring small quantities of basic slag, superphosphate may be used in its place, mixing in also one part of quicklime.

Names of Fruits: *G. Monro.* We think your Pear is "Flemish Beauty," or possibly it might be "Directeur Hardy," both are very much alike. You will understand how difficult it is to name Colonial grown fruits, and for several reasons, but principally that almost all English grown Pears are now past, and comparison with them therefore cannot be made.

Names of Plants: *C. W. S.* Ochna multiflora. —*F. S.* (from last week). 1, Quercus Ilex var. macrophylla.—*A. B., Tamworth.* Cœlogyne cristata, Chatsworth variety. When well-grown it often produces two flower-spikes from a single pseudo-bulb.—*P. S.* A seedling form from R. arboreum. We do not know if it has a distinct name or not.—*A. E. B.* 6, Genista hispanica.

Odontoglossums: *H. T. Pitt.* We thank you for the examples of rare Odontoglossum flowers. O. Wilckeanum, Pitt's variety, is certainly a very remarkable form.

Palm Leaves: *W. Y. X.* It is not unusual for Palms to have the leaves turn brown in winter as shown on your specimen, especially if they have been used for indoor or conservatory decoration. Repot the plants and induce them to make fresh leaves.

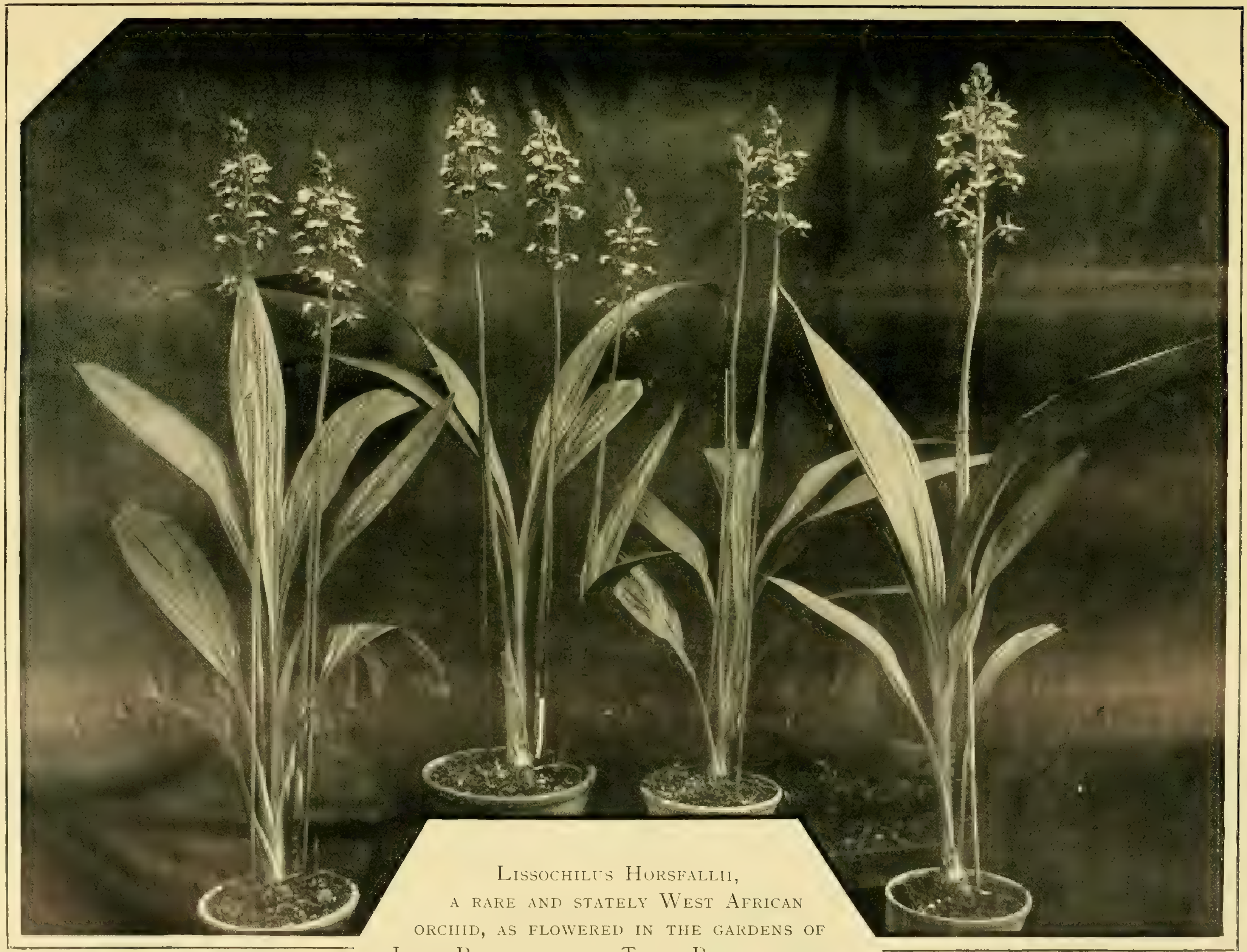
Peaches: *C. J. C.* Your trees are affected with the "silver leaf" disease, supposed to be due to a fungus. Cut the shoots back; perhaps the new shoots will come healthy, but we greatly doubt it. Water with a weak solution of iron sulphate, using ½ ounce of the iron salt to 2 gallons of water.

Tomatos: *T. H. G.* We expect that failure has resulted from lack of sufficient ventilation, and of exposure to the sun's rays. Tomatos must be given no shading at all. Let the plants be planted in very firm and only moderately rich soil, then you will be able to obtain short-jointed growths that will flower freely. Keep each plant to a single stem by pinching off all laterals at the first leaf. You may cultivate the plants in pots, or in the border, but do not permit Cucumbers or anything else to shade them.

Violets: *Dulwich.* The Violet disease so often described and figured in these columns. Burn the old plants and plant fresh stock in a fresh portion of the ground.

Communications Received.—W. H. C. (We were aware of the quotation, but there is no mention in it of the word "pips")—F. M.—T. J., Aberdeen—F. J. C.—O. T.—Sir H. M.—T. S.—A. O.—R. C.—J. Harrison.—D. (with thanks).—G. H. T.—L. P.—J. M. (We are glad you liked the illustration)—Sir E. L.—E. W.—J. M.—W. P. W.—H. J. E.—K. & Co.—J. H.—H. S.—R. F.—T. J. H.—C. D.—C. R. F.—J. E.—W. S.—J. T. B.—G. M. S.—R. W. D.—H. W. W.—V. H. L.—H. M.—D. R. W.—T. H.—H. F. MacM., Ceylon—G. T.—J. M.—C. R.—J. H.—Harris (letter and telegram)—R. H.—F. M.—J. G.

For Market and Weather Reports, see page xvi.



Lissochilus Horsfallii,
a rare and stately West African
orchid, as flowered in the gardens of
Lord Rothschild, at Tring Park, where it
has been cultivated as a river-bank plant. Height of the plants shown at the R.H.S. Meeting, on
March 6th, five feet. Colour of flowers, purple and white.

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View in "The Dell" at Sandringham. (Supplementary Illustration.)

THE HIPPEASTRUM.

THIS handsome hothouse plant will now be coming into flower. It is one I used to exhibit successfully some 20 to 25 years ago. Messrs. James Veitch and Sons, of Chelsea, had some years previously introduced two very distinct and handsome species from the Andes of Peru through their collector, Mr. Pearce. H. pardinum was the first of the two to produce flowers in the Chelsea nursery in 1867. H. Leopoldi flowered in 1869. And when we see the superb garden varieties now exhibited by Messrs. Veitch and others it is as well to know that their origin can be traced to these two species. Mr. John Seden was the first to cross-fertilise them, and the initial attempt was remarkably successful. H. Ackermanni pulcherrimum was a great favourite at that time, and it was crossed with the pollen of H. pardinum. Three very good garden forms were produced from this cross—viz., Chelsoni, Brilliant, and Maculatum. The work of cross-fertilising soon passed into the hands of Mr. John Heal, and many of the beautiful garden varieties in existence 20 years ago were raised by him at Chelsea. The characteristics of H. pardinum and Leopoldi were the very short tubes they possessed, and the habit of producing two flowers on a scape. They lacked somewhat of the vigour possessed by some other varieties in cultivation at the time.

The family of Mr. de Graaff, of Leiden, had also been working for many years in hybridising and cross-fertilising the Hippeastrum. As long ago as 1790 the De Graaffs had raised hybrids, and they are still continuing this work. Amongst others they raised a truly handsome variety named Empress of India, which was raised by crossing a dark-coloured seedling from H. psittacinum with another seedling of their own named H. gravianum. This handsome variety, Empress of India, produced large crimson-coloured flowers, four and five on a scape; and another variety named "The Giant" was introduced at the same time. Other growers had been working in the same direction with such material as was available. As early as 1799 a watchmaker of Prescot, in Lancashire, named Johnson, began the work of hybridising, and made a cross between H. reginæ and H. vittatum and produced H. × Johnsoni. Dean Herbert asserts that Johnson raised this hybrid in 1810, and it was also raised by himself at Mitcham in 1811. Herbert was a most indefatigable hybridist, and could not be satisfied with merely cross-fertilising garden varieties. There were a number of interesting and some handsome varieties and species in cultivation before the year 1810. H. striatifolium had flowered in Messrs. Lee's nursery, Hammersmith, in 1781. The type forms of H. reticulatum was in cultivation in 1777 H. equestre was introduced in 1698; H. reginæ in 1728. H. vittatum, used so much by Herbert as a parent, was introduced in 1769. The splendid strains produced by Ker, of Liverpool, and Williams, of Holloway, are known to all lovers of these plants.

The modern cultivator in nearly every instance looks to the production of beautiful garden varieties, and obtains the best he can find in the market for this purpose, and it is not important to him what were the original species from which the existing garden varieties were obtained. His object is gained if he improves upon existing forms, either by obtaining better or brighter colours, or better form in the flower, etc. Herbert's work was entirely different; he, working from a scientific standpoint, made crosses from original species, and many of them must have been of great interest. Amongst others he raised H. Henslowi, named after the Professor of Botany at Cambridge. Several interesting crosses were made at the same time by others. Sweet, at Colvill's nursery, a Mr Griffin, and also Mr. R. Harrison were all co-workers, and the result is given at pages 142 to 144 of the *Amaryllidaceæ*. There are 31 examples of the hybridist's art described, many of them from H. reticulatum. A very pretty form of the Habranthus section is figured in the *Botanical Magazine*, t. 7,344. It is named H. brachyandrum, and was described by Mr. Baker from examples that flowered at Kew: "The first flowers opened in July, and they continued till September, so that the plant proves to be a valuable acquisition to horticulture." The plants seem to have been flowered in an open border with a southern exposure. The colour of the flower is a deep claret red, fading to pale pink at the top of the funnel-shaped perianth.

As is well known, the garden varieties of the Hippeastrums are really hothouse plants. They do not require a very high temperature, but luxuriate in a bottom heat of 80 degrees to 85 degrees, and an atmospheric temperature of 60 degrees when they are approaching the flowering stage. How it would rejoice the hearts of thousands of amateurs who can afford a greenhouse, but object to the expense of a hothouse, if a strain of plants of this genus could be obtained that would be at home in a greenhouse! I have seen only the coloured plate of H. brachyandrum, which shows it to be a handsome species, and a fair rival to Vallota purpurea, a well-known greenhouse plant. Another charming greenhouse plant is the Jacobean Lily, Amaryllis formosissima. This species does not seed freely. Indeed, Herbert states that no instance had come to his knowledge of its having borne seed in England. This is so near Hippeastrums that one would think it might be hybridised with them. Ripe seed was obtained from it by the late Colonel Trevor Clarke. I believe he gave seeds to Kew nearly twenty years ago. Amateurs with time to spare might obtain much enjoyment by working out scientific experiments on the hybridising of these comparatively hardy species. Cyrtanthus hybridus is stated in *Gardeners' Chronicle*, 1885, vol. xxiv., p. 391, to be a hybrid between the Vallota and Cyrtanthus sanguineus. No one can tell what might be accomplished by the intercrossing of these allied genera.

How to Raise Seedlings.

A few remarks may be useful on the raising of seedlings and the general culture of Hippeastrums. In order to obtain any measure of success, cross-fertilisation must be resorted to. When Empress of India was first introduced I obtained a plant and fertilised the flowers with their own pollen, and obtained over 400 plants, but they proved very disappointing; very few were as good as the parent, none was better, and not one in fifty was so good. There was also but little variation in colour, whereas if cross-fertilisation had been attempted many distinct and beautiful varieties would have been forthcoming. The stigma and stamens are so conspicuous that it is quite easy to cross them. The stamens, of course, must be removed from the seed-bearer before the pollen-cases burst, and in 24 hours the stigma will be in condition to have the foreign pollen applied. The capsules swell rapidly, and the seed will be ripe in June or July. Sow it as soon as it is ripe in a hothouse in bottom heat. The young plants will soon appear, and if they are potted off in good soil, a dozen or so in six-inch flower-pots, they will make excellent growth the same season, and good bulbs will be formed. They will be all the stronger if the flower-pots are placed over a little bottom heat. The plants do not require a long season of rest, but should be kept dry at the roots during November and December and part of January. They will not lose their leaves during the winter, and in January three of the plants may be potted into six-inch flower-pots, and, if placed in a moderate hothouse atmosphere, with a gentle bottom heat, some of them will form flowering bulbs by the end of the season. The potting soil may be good yellow loam four parts, decayed stable manure one part, and leaf-mould or peat one part. At the end of the season all the bulbs may be rested until potting time in January, when they should be repotted singly and treated as ordinary named varieties. It is not absolutely necessary that these plants should be grown and flowered with their pots plunged over the rims in spent tan from a tan-yard, but those who cannot afford to treat them so will not be able to obtain such satisfactory results as those who can.

I would warn those young gardeners who aspire to success in the culture of these plants that they must be very careful as regards watering, especially after the bulbs have been recently repotted. If the potting compost is fairly moist to start with, no water should be given for two or three weeks afterwards. By that time some growth will have been made, and water of the same temperature as the atmosphere of the house may be applied at first round the sides of the rims, so as not to allow any to lodge at the base of the bulbs. When the pots have become full of roots water may be applied freely; but if the flower-pots are plunged they will not require a very great quantity of water. The garden varieties of Hippeastrum have now attained to such a high standard of excellence that fewer varieties receive certificates than heretofore. I have looked through the reports of the Floral Committee of the Royal Horticultural Society, and find that one only was certificated in 1904 and none in 1905. That in 1904 was a truly handsome variety named Snowdon (see fig. in *Gardeners' Chronicle*, April 30, 1904), pure white, and raised by Mr. Fielder, the very able gardener at North Mymms Park. This received a first-class certificate for its vigorous habit, large size of the flowers, and their perfect form. Other white varieties have been raised, but none at all approaching this. Many very fine varieties were exhibited, but the committee evidently thought that none of them were advances on previously raised varieties. *J. Douglas.*

CHINESE CONIFERS.

A NEW CHINESE LARCH.*

BOTANISTS have described two Larches as native to the province of Szechuan. One was described by Batalin in 1894 under the name of L. Potanini, another collected by Prince Henry of Orleans was called L. thibetica (1899). Judging from the descriptions only, it seems most probable that the two names refer to one and the same species, and, if so, the earlier name, that of Batalin, must be adopted. Specimens were collected by Wilson in the same district, and were considered by him to belong to the same species as that above mentioned. Seedling plants are in cultivation at Messrs. James Veitch & Sons' Nursery at Combe Wood, on which account it is desirable to give a description and illustration taken from Wilson's n. 3,009. Mr. Wilson tells us that it is a tree ranging from 20 to 60 feet in height common around Tatien-lu at an altitude ranging from 7,500 to 11,000 feet. It is the Hung Sha of the Chinese, and is the most valuable timber tree in Western China.

The bark on the young shoots is of an orange yellow colour and slightly hairy, on the older shoots the bark becomes glabrous and of an ashen grey colour; the leaf cushions or pulvini are slightly prominent, linear. The leaves, which measure from 20-25 mill. (occasionally much shorter), are glabrous, linear, apiculate, flattish, with a prominent midrib. The mature cones are 35-40 mill. long, 18 mill. broad, sessile, deflexed, oblong-ovoid, obtuse. The bracts are conspicuous as long as, or, in the young state, longer than the scales, membranous lanceolate, often markedly acuminate, and frequently recurved; cone-scales brownish grey, rounded truncate, seeds winged. Beissner's Larix chinensis is from a different district (northern Shensi) and differs materially from the present species in its cones.

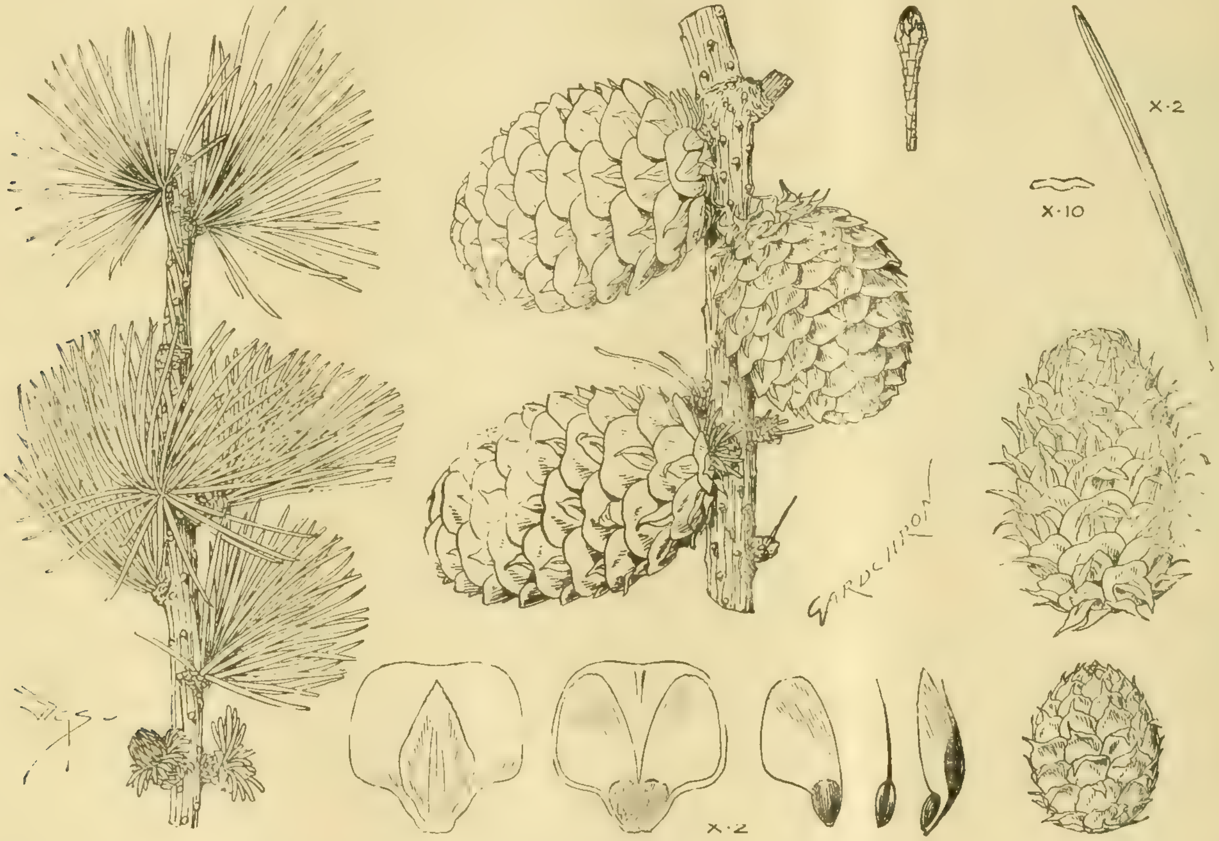

FIG. 68.—LARIX POTANINI.

To the left, branch with tufts of leaves; in the centre, three mature cones of real size; to the right, a bud, a leaf of twice the natural size with a transverse section magn. 10 diam., young cones; in the lower line, bract, cone-scale and seeds magn. 2 diam., and young cone.

THE ADVENT OF THE DAFFODIL.

THE Narcissus, in all its myriad forms, is an eminently satisfying flower. An imperfect Daffodil would be a kind of anomaly; such a phenomenon is hardly conceivable, especially in this age of hybridisation. No bulbous plant is so marvellously accommodating; it can be planted almost anywhere, on grassy lawns, picturesquely in leaf-mould at the feet of venerable trees—in which situations it is uniquely beautiful—or wherever there is adequate drainage—a matter of supreme importance—in ordinary garden loam. The finest and most impressive of modern Narcissi succeed admirably in such positions, and, as a general rule, are not greatly affected, unless where shelter is utterly unattainable, by atmospheric influences. Like Henry Kirke White's Early Primrose, they are, only too often for the composure of their ardent cultivators, "nursed in whirling storms, and cradled in the winds." Shakespeare, the greatest of poetic thinkers, has told us that "they come before the swallow dares, and take the winds of March with beauty"; and Wordsworth, the high priest of Nature, has declared that "they gleam into that inward eye which is the bliss of solitude"; thus memorably emphasising their moral suggestiveness. Much of the purest and loftiest inspiration of which mankind is capable is derived from such exquisite vernal flowers. Such being the case, I think it is quite a misfortune for the ordinary cultivator of limited resources that many of the most recently introduced Narcissi should be advertised at quite prohibitive prices, so far at least as humble amateur gardeners are concerned, and that they will not be accessible to men of modest means for many years. For these, however, there remains this enduring consolation, that many glorious varieties such as Emperor and Empress, Maximus and Grandis, Queen of Spain, Barri Conspicuus and Duchess of Westminster, not to speak of the many lovely forms of Narcissus poeticus, are quite within their reach. They have also the assurance that such much-envied varieties as Peter Barr, whose price has fallen vastly within the last year, Weardale Perfection and Madame de Graaff (which I had the pleasure of planting last September for the first time in front of my study window) will ere long be equally accessible. Hitherto, unless perhaps at the nurseries, I have only had the privilege of seeing individual flowers of these, or of Mr. Engleheart's or Mr. Haydon's most recent creations. But even to study such flowers at a metropolitan exhibition is a veritable refining horticultural education. During the season that here, with Narcissus scoticus and Telemonius plenus, has just begun, I hope to see my namesake, a grand derivative from Emperor, described by a great specialist as "a bold and noble flower," for the first time in bloom.

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* LARIX POTANINI, Batalin in *Act. Hort. Petrop.* xiii., p. 385 (1894).

L. thibetica, Franchet in *Journ. de Bot.* (1899), p. 262.

Other uniquely interesting varieties whose appearance on our lawn I await with great interest are the queen of white Daffodils—Madame de Graaff, the exquisitely beautiful Narcissus Johnstoni, Queen of Spain, that finest of the delicate Leedsi forms, Duchess of Westminster, the great Bicolor Victoria, with bright yellow trumpet and massive, cream-like perianth; the moschatus of Haworth, a miniature beauty, invariably sweetest in aspect, and most enduring in existence, when thus naturalised in grass; Narcissus albicans, one of the most charming of all natives of Spain; and the silvery-white, pendulous Colleen Bawn.

However familiar to our consciousness such flowers may appear, their vernal advent is always a radiant revelation. *David R. Williamson.*

CULTURAL MEMORANDA.

NIDULARIUM INNOCENTI STRIATUM.

THIS Brazilian Bromeliaceous plant has bright green leaves, each from 8 to 12 inches in length, beautifully striped with a central white variegation, deepening off to a creamy-yellow, broad, arching, lanceolate in shape, the margins being furnished with small spinose teeth. It is, therefore, an attractive and very elegant plant. It may be propagated by suckers detached from the parent plant and potted into small sixty-size pots in a mixture of equal parts leaf-mould and fine sandy loam, with a liberal addition of silver sand, the whole being well mixed together before being used. Place the plant on a shelf in the plant-stove or propagating pit, and afford water through a fine rose to settle the soil.

GMELINA HYSTRIX.

THIS climbing plant is most suitable for clothing the roofs, pillars, and walls of plant-stoves, warm greenhouses and conservatories. It was introduced from the East Indies, and resembles the Bougainvillea in habit of growth. The flowers are freely borne in dense, terminal, drooping spikes, and have acuminate bracts, effectively veined with purplish red, the corolla being nearly 3 inches long and of a beautiful golden yellow colour. The plant may be propagated from cuttings of the young growths, about 3 inches long, taken off with a little wood of the previous year's growth attached. The cuttings should be inserted in suitably crocked 3-inch pots filled with light sandy mould. Place the pots in the propagating pit, or in any structure in which a warm, moist, atmosphere is maintained, where they will soon form roots. After the little plants have made some top growth they should be potted off singly into the same size pots in the same description of mould as before, returned to heat, and watered *H. W. Ward.*

TREES AND SHRUBS.

GROUP PLANTING OF CONIFERS.

SOME gardeners are prone to dogmatise overmuch in regard to the manner in which trees should be planted, and other matters; not recognising or admitting there may be cogent reasons for departures from the methods and practices which they think to be right. Let us take the planting of trees in groups, or singly on lawns and in pleasure parks and grounds. The proprietor may be desirous of securing immediate effects, and the fact is generally known that trees make more rapid growth upwards when planted in company with others than planted singly at wide distances apart owing to the mutual shelter afforded against wind and storms; the more equable temperature enjoyed, and the greater abundance of moisture found in the air in a group, and the hindrance to evaporation afforded by the foliage of the trees composing the group. Let anyone compare the growth made by the same kinds of trees planted in groups and singly at the same date. Moreover, the closer the planting the more rapid the rate of growth. I have observed groups of Red Cedar (Juniperus Virginiana), the tree which affords wood for making pencils, which measured from 20 to 40 yards in diameter, and the trees stood at less than 3 feet apart. These groups were symmetrical in general outline 60 years after planting, contained no perceptible gaps, never admitted the full force of the wind into the interior of the groups, and carried good healthy crowns, although all below 15 feet high consisted of bare, branchless poles of 6 to 8 inches in diameter at man's height; and as the groups were set out at distances of 100 to 200 yards apart, they supplied capital wind breaks, and agreeable if dark coloured furnishing for an extensive pleasure ground.

Where space could be afforded, I would recommend the planting of this rapid-growing Conifer at 2 feet apart, for affording poles and stakes for garden use; especially for supplying "rustic" supports for creeping and climbing plants out of doors; fencing, etc.; the wood when felled in the winter and seasoned in airy sheds for two years being very durable. The tree at any age has but little sapwood; and in lasting properties excels Hazel, Sweet Chestnut, Ash, or any other coppice woods which I know of. A good example of group planting was carried out in the gardens at Aston Clinton by the late Baron Anthony de Rothschild many years ago, the species of Conifer planted being Sequoia gigantea (Wellingtonia). It is some few years ago that I observed these two groups, and the trees were at that time in perfect condition and about 40 feet in height, with stems at 3 feet from the ground of 1 foot in diameter. A good deal of conifer planting was carried out at about the same time on that portion of the estate situated on the Chiltern Hills above Aston Clinton, but I do not know if choice Conifers alone were planted in close order, or nurse plants of quick-growing kinds were also employed. This extensive plantation right on the top of the hill contained many magnificent Conifers, which were largely drawn upon when Halton was being laid out for Alfred de Rothschild, Esq., about a quarter of a century ago.

Another Conifer which groups grandly, and grows rapidly, is Sequoia sempervirens (Redwood). The columnar habited Conifers are always best for solitary or group planting, and flat-headed Firs, such as the Weymouth Pine and Scots Pine, and others of that class, which soon lose their lower branches, and then admit wind and sun, are less well suited for forming small groups in pleasure grounds, these being the more effective when the outer lines of trees preserve their branches down to the ground level. *F. M.*

LEAVES FROM MY CHINESE NOTE-BOOK.

THE FLORA OF THE DISTRICT.

(*Continued from page 166.*)

THE MECONOPSIS AT LAST.

At 11,000 feet I came across the first plant of Meconopsis integrifolia! (See *Gardeners' Chronicle*, October 1, 1904, p. 240.) It was growing amongst scrub and was past flowering. I am not going to attempt to record the feelings which possessed me on first beholding the object of my quest to these wild regions. Messrs. Veitch despatched me on this second, and very costly, journey to the Tibetan border for the sole purpose of discovering and introducing this, the most gorgeous Alpine plant extant. I had travelled some 13,000 miles in 5½ months, and to be successful in attaining the first part of my mission in such a short time was a sufficient reward for all the difficulties and hardships experienced en route. The second part of my mission was easily accomplished in due season, and to-day this plant is well known to all readers of the *Gardeners' Chronicle* and other horticultural journals.

As we continued the ascent, Meconopsis integrifolia became more and more abundant. At 12,000 feet and upwards, miles and miles of the Alpine meadows were covered with this plant, but only a few late flowers remained. Associated with the above species I found Meconopsis Henrici. This is a charming plant with medium-sized, dark violet-purple flowers, borne on scapes 6 inches to a foot high. Like M. integrifolia, M. Henrici is a social plant, and occurs in thousands.

With the Rhododendrons above 12,000 feet, at least four species of Salix occur; one of these species of Willow grows prostrate over rocks, and is not more than an inch high. Beneath the gnarled and twisted trunks of the Rhododendrons, Cassiope selaginoides occurs in myriads. On bare, exposed rocks, Potentilla fruticosa is plentiful. Three forms of this plant are distinguishable, having respectively white, lemon, and deep yellow flowers. The white form attains the highest altitude. The Rhododendron bushes are only 4-6 feet high, and though they flower freely enough, but few seed-pods are produced. A dwarf species of Rhododendron, with small purple flowers and minute leaves, cover these uplands as heather does the Scottish moors.

The summit of the pass (13,100 feet) is flat, about a quarter of a mile across, and flanked on the right and left with grassy mountain slopes.

Several ponds of good size occur on the summit, and two or three large cairns of stones mark the boundary of the kingdom of Djiala in this direction. Snow lays for eight months of the year on the top of the pass. A row of stakes 10 feet high marks the path across, but in spite of these, lives are often lost on this pass in winter.

Very few Rhododendrons occur on the summit, and save an occasional Willow and Juniper no other shrub. This exposed summit, over which the wind sweeps pitilessly, was at the time of my visit one carpet of herbs: Gentians, Anemones, Primulas, Meconopsis, Corydalis, Senecios, Fritillarias, Orchids, Pedicularis, Potentillas, Oxytropis, dwarf Delphiniums, various species of Compositæ, Leguminosæ, and Labiatæ—flowers of every hue in myriads! Dense mists prevented an extensive view of this fairyland; the thermometer stood at 48° F. Wet to the skin and shivering with cold, yet we were loth to turn our backs on a scene so enchanting. A glance at the watch showed 4 o'clock; this meant that unless we wished to be benighted we had better return with all speed.

It was with many misgivings that we approached our new lodgings at 6.30 p.m., but to our glad surprise everything had favoured us. We were accommodated in a nice weather-proof room, with a fairly clean boarded floor.

Our cook was quite strong again, and had a nice warm meal ready for us, to which we speedily did justice. The previous night's experience was soon forgotten, and a sound night's sleep rewarded the exertions of the day.

The next day we attempted to climb up to the snow-line, but only succeeded in reaching 15,000 feet. This climb enabled me to make out the zones of vegetation more clearly, and to better understand the limits of certain species. To my collection I added several fresh plants of interest, including Spenceria ramalana, Meconopsis horridula, M. sinuata var. Prattii, Incarvillea Principis, Braya sinensis, Trollius ranunculoides, two species of Cyananthus, various Composites and Labiatæ, and the curious Himalayan trefoil Parochætus communis.

The Meconopsis were growing in the niches of bare granite cliffs between 13,500 and 15,000 feet. The Incarvillea has bright crimson flowers and was abundant in grassy places between 13,000 and 14,000 feet. Meconopsis integrifolia ceased at 14,500 feet. At this altitude this plant is very much reduced in stature and occurs on tops of humus-clad rocks and in the niches of cliffs.

At 15,000 feet, which is practically the limit of vegetation hereabouts, I gathered Meconopsis horridula, Arenaria sp., Ranunculus glacialis, Draba sp., Primula sp., Saxifraga sp., Carex sp., a very curious Composite, and the lovely Myosotis Hookeri. With the exception of the Composite, all the above are small, tufted, cushion-like plants. Hooker's Forget-me-not forms cushions a foot or more across—one mass of lovely blue flowers—and is a most charming Alpine.

At 14,200 feet we encountered the moraine of an enormous glacier. Over this we scrambled and ultimately reached a ridge at 15,000 feet. In front of us was another desolate moraine, or series of moraines, and immediately above us towered bare, inhospitable cliffs of granite and gneiss. The day was bright and sunny, and the radiation from the bare rocks excessive. At 3 p.m. the thermometer registered 80° F. The moraine in front of us terminated in tremendous fields of ice, glaciers of a virgin peak, 21,000 feet high.

The sun shone brilliantly, and we got a magnificent view of the surrounding mountains. South, south-west of us lay a gigantic peak, several thousand feet higher than the one mentioned above; its summit crowned with snowfields of enormous size. On every side, as far as the eye could range, towered mighty snow-clad peaks. When this *terra incognita* is properly surveyed, it will probably be found that many of the peaks equal the highest peaks of the Indian Alps. *E. H. Wilson.*

(To be continued.)

TREE CARNATIONS.

We seem to have lost sight of the varieties to which the name "Tree" was originally applied, but I have previously suggested that it has been from such as we grew forty years ago that the Americans have obtained such signal success. I believe most of those with the flowers more or less fringed originally came from the Continent. La Belle Rose, one of the first I remember, had flowers somewhat similar to those of the American variety G. H. Crane, but not so large in size. The white variety, with fringed flowers, I believe, was called The Bride. Then, later on, we had Laura, of blush-pink, and Andalusia, primrose-yellow. La Belle was of the same habit, but the flowers were not fringed. Mrs. Keen, a very tall-growing variety, with crimson flowers, was an old favourite. I think if we had kept to those just referred to we should have been quite even with the Americans; but the aim of English raisers was to discard varieties with irregular petals in favour of those with broad, smooth petals, having a "regular" edge. Yet from France we got other good varieties. A. Alegatière was a great favourite about 25 years ago; but before this Mr. Charles Turner, so well known as a Carnation specialist, had introduced other varieties of a dwarf habit. Foxhunter, of bright scarlet, was one of the first I remember; then we had Miss Joliffe, which for a long period enjoyed a higher reputation than any other variety grown for market purposes. Lucifer was another of the dwarf-growing section. Irma, pink, was for a long period a favourite. La Zouave, Vulcan, and others were too much of the habit of the border sorts, and it was by introducing such as these into the winter flowering section that we lost ground. Winter Cheer, though a dwarf variety, proved to be most valuable for winter flowering, and for the past 15 or 16 years has remained a favourite, during which time it has been the parent of many other useful sorts. Further perseverance may be recommended with this type, for if not quite so valuable for producing flowers for cutting, they make useful flowering plants. It was after the introduction of this variety that I commenced to cross-fertilise Carnations, and found it one of the most prolific seed parents. One of the first crosses made was from pollen of Uriah Pike, secured from flowers bought in the market before plants of the variety were sold. From the first cross the variety Henry Gibbons was obtained. The flowers were not very full, but the variety had the free habit of Winter Cheer, with the rich crimson colour of Uriah Pike. I never could recognise this latter variety as a proper Tree Carnation, for in plants propagated in the spring it was only the main stem that would flower in the winter, all the side shoots remaining until late in the spring before starting to

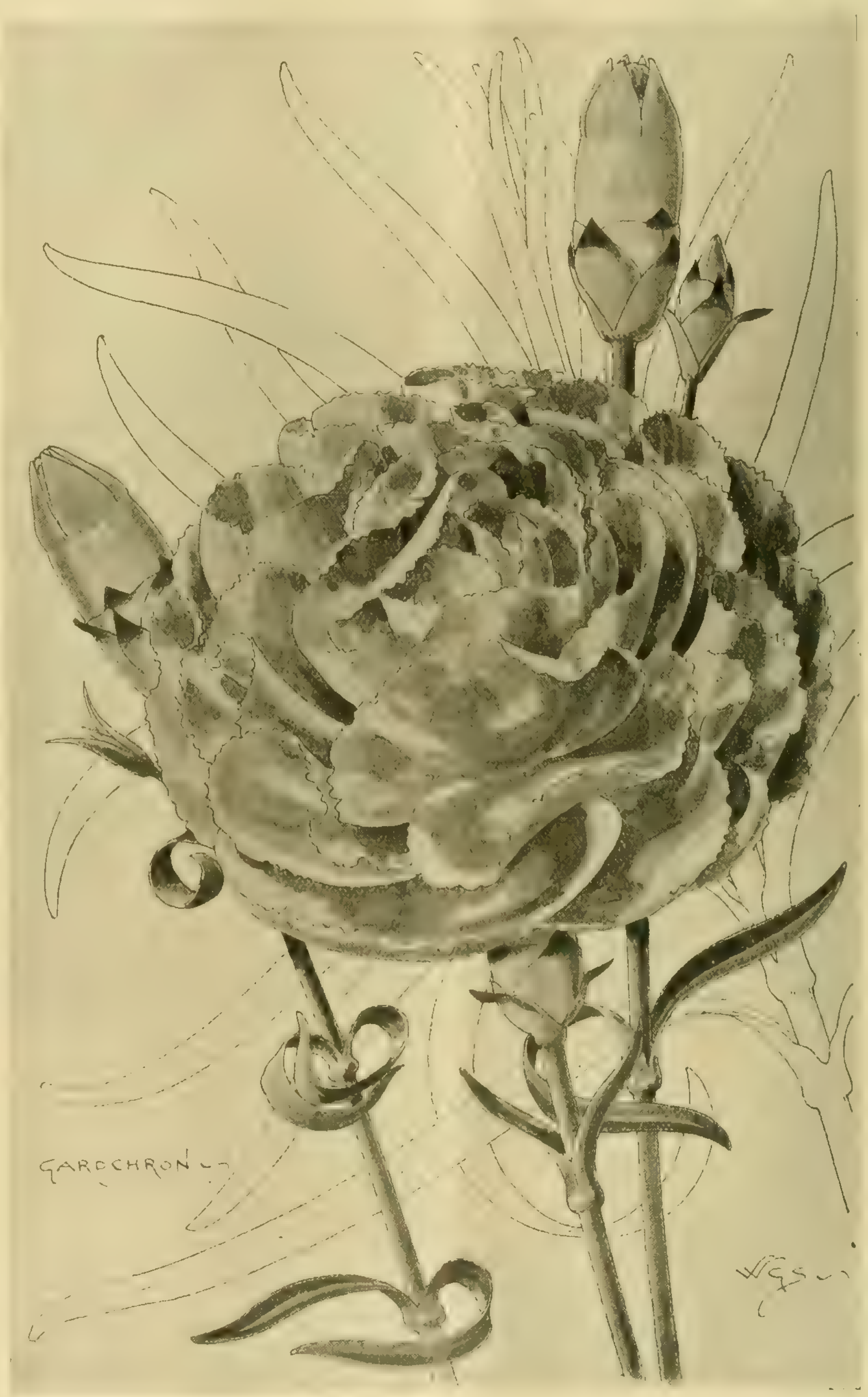

Fig. 69.—English-raised Tree Carnation "Elliott's Queen," which obtained an Award of Merit at the R.H.S. Meeting on March 6; flowers, rose coloured.

(See note on page 181.)

show flower stems. This is the most important distinction between the Border and the Tree varieties. In the latter the side shoots follow on. Taking Winter Cheer as one example, when planted in the open ground I have seen the same plants maintain a regular succession of bloom right on to nearly Christmas, and if the weather had been favourable they would have continued longer; while the Border varieties in the next beds produced but one crop of blooms, the lateral growths failing to develop flower stems.

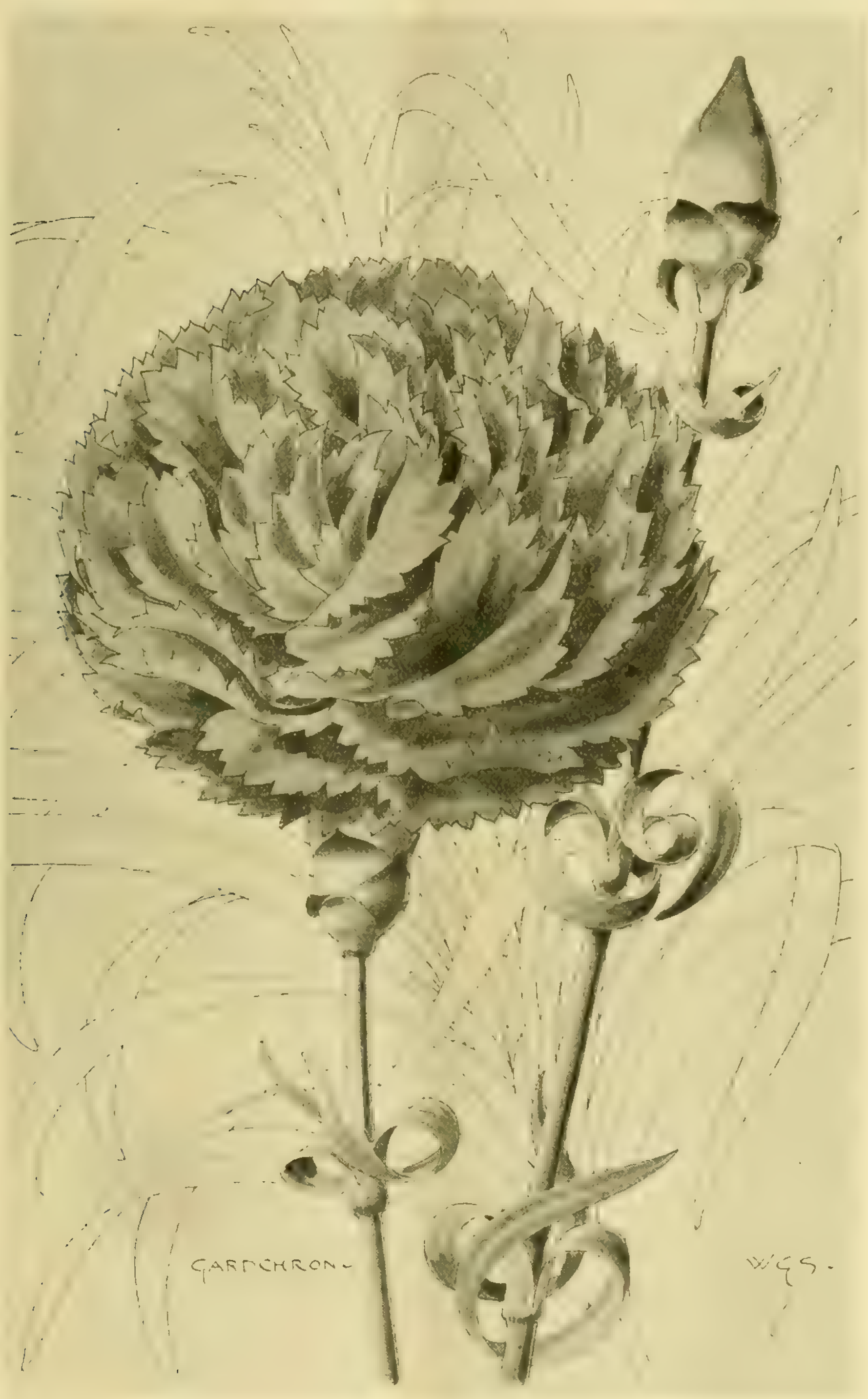

Fig. 70.—American-raised carnation "Nelson Fisher," which gained an award of merit at the R.H.S. meeting on March 6; colour of flowers, deep shade of cerise.

Mr. H. B. May, of Edmonton, sent out a set of very useful varieties, many of them having been obtained from Winter Cheer. Countess of Warwick was an improvement on H. Gibbons, and later still was Prince of Wales. W. Robinson, which is still grown extensively, was a considerable improvement on scarlet varieties. Primrose Day, a fine yellow flower, The Shahzada, Zenobia, and several others were good, and have been followed by later varieties from the same parentage.

Mr. Godfrey, of Exmouth, is another grower who raised some good things a few years ago, but he seems to have worked more on the Madame Therèse Franco type. His "Pride of Exmouth" is recognised as one of the most useful pink varieties for market, and Godfrey's King is a good crimson flower. Madame Therèse Franco is still extensively grown for supplying the market with cut blooms. It was first shown in August, 1892, under the name of Mrs. Leopold de Rothschild, and an award of merit was given by the Floral Committee of the R.H.S. In October of the following year it was shown by Messrs. Veitch and Sons, Chelsea, under its proper name, and was again given an award of merit. It appears to have been of French origin. Only the last time I was in the market I noticed a splendid lot of blooms of this useful variety; but the older favourite, Miss Joliffe, seems to have almost died out.

Of the more recent additions some varieties from Messrs. Cutbush and Sons show evidence of American blood in them. General Kuroki is much after the American type, the large, bright scarlet flowers having stiff stems. Mrs. S. J. Brooks, the pure white flower of earlier origin, also belongs to the American type. The firm have added a good many other useful sorts which indicate the same parentage.

Mr. W. E. Boyes, of Leicester, has for some years been a successful worker. He has on several occasions exhibited his own raised varieties, both as pot plants and as cut blooms. I have before me some fine blooms received from him, and these indicate some relationship to the Americans. One of the finest is Dr. W. G. Grace, of intense scarlet colour; the large spreading petals are fringed, the calyx is good, and the stems long and erect. The Hon. A. Lyttelton, red, with petals of good substance, G. A. Boyes, white, with a slight blush tint, large full flowers, with stem and general form favouring Enchantress, Lady Carlisle, rosy pink, and Lady Lonsdale, white, suffused with pink, with several other good sorts, are all of a strong-growing type.

Mr. A. Smith, of Enfield Highway, is another successful raiser. He has sent me blooms of Britannia, a large scarlet flower, of perfect form, with good calyx and strong stem. Liberty, another good scarlet variety, which was well shown last November, Coronation, a very pretty pink variety, but the flowers rather small, Progress, a cerise coloured flower, with fringed petals, and, as recently seen, a most promising variety, are only some of Mr. Smith's seedlings.

Mr. H. Elliott, of Hassocks, Sussex, is another raiser. Elliott's Queen, of deep rosy-pink colour and large size, is quite of the American type, and gained an award of merit on March 6. H. Elliott is a deep pink flower, something after Mrs. T. W. Lawson, very large, well-filled flowers. Mr. Elliott speaks very highly of some newer seedlings I have not seen.

Messrs. R. H. Bath, Ltd., Wisbech, are working on the American varieties, and they have sent me blooms of a seedling raised from Mrs. T. W. Lawson, the pollen parent being Lord Roberts, a good yellow variety. The flowers received have a buff ground, flaked with red, and it appears probable that another generation may produce a good yellow flower, which is wanted more than any other winter-flowering variety. From the same seed-pod yellow varieties were secured, but they were not good on all points. Having so many now working on these useful flowers, we may expect further good results; but it may prove difficult to make selections when they become so numerous.

(To be concluded.)

FORESTRY.

CLIMATE and TREE GROWTH.

As communications have appeared from time to time on this subject in the *Gardeners' Chronicle*, all of which are apparently intended to prove that the comparison I draw between the climate of Belgium and that of the North of England and Scotland amounted to a libel on the latter, perhaps I may be permitted to sum up a few of the statements made by different correspondents, and note how far they go to disprove my original statement published in the *Gardeners' Chronicle*, November 18, 1905. This statement was as follows: "As regards climate, it was apparent that the rate of growth of all species was much more rapid than that seen, say, north of the Midlands."

Sir Herbert Maxwell gave instances of the growth of several species which I did not consider as proving or disproving the point I raised, as they referred rather to the growth of individual trees than to that of crops of timber several acres in extent, and growing at what we consider high elevations. It is only by duly taking this question of elevation into account that the real point at issue can be discussed at all. When we find forest crops growing well in one country at 2,000 feet above sea level, and in another ceasing to grow profitably at 1,000 to 1,200 feet, the only reasonable deduction that can be made from such a fact is that the climate of the former is warmer than the latter during the growing season or summer months. Whether this extra warmth is an advantage or not depends upon the species grown and the quality of timber desired. This question of quality was never raised by me at all, but simply the rate of growth of such species as Scotch Pine, Spruce, Oak, Beech, or other hardy and common forest trees when growing north of the Midlands. If anyone can give me instances of crops of Scotch Pine or Spruce growing at the average rate of 2 feet yearly for the first thirty years at an elevation of 1,000 feet or over, and in that part of the British Isles I specified, then the question may be considered settled, as a parallel to the case I quoted will have been found.

Dr. Henry tells us that the absence of cold drying winds during the winter months is a feature of the British climate favourable to tree growth. And is not the absence of such winds during May and June of equal importance? He also points out that his investigations have proved the suitability of the British climate for the growth of most indigenous and a few introduced forest trees. Cæsar came to the same conclusion 2,000 years ago, and made a note of it, but it is rather the comparative rates of growth of these trees than their healthy existence and normal development that we want to get at.

Mr. John Booth states the growth of certain Conifers at Bicton and Dropmore surpasses anything he has seen in Germany, but both these places are a long way south of the line I laid down. Meeting him on his own ground, however, I should like to ask him where his studies of tree growth in Britain have been made. Have his arboricultural visits been chiefly made to places famous for fine specimens, or to the ordinary woodlands of the country growing on hill-sides, where such species as Cedrus Deodara, Taxodium sempervirens, Pinus Hartwegii, and many others would be failures? A few weeks back he told us that Cobbett was right when he stated that the Locust tree was superior to the British Oak for forest planting. If Mr. Booth will give the dimensions of individual trees and their number growing on ten acres of ground, half of which have been planted with our species and half with the other, and allowed to mature, I think I can show him not only that Cobbett was wrong, but where he was wrong. The list of trees Mr. Booth states his ability to draw up, and which will contain the names of trees able to grow in this country, but not in Germany, is no great wonder, when we consider the difference in the winters of the two countries, but how many of the trees in this list will attain their normal dimensions here, and how many are superior to the native trees of the country? Many species again which are successful in such sheltered spots as may be found in abundance in most hilly districts are complete failures when planted on high and exposed ground in the same districts. In the Lake district of Cumberland, and parts of Perthshire, many trees, especially Conifers, reach large dimensions, but a few miles away similar results are not obtained. In the one case we have a purely local climate, or conditions of growth; in the other the average climate of the country exerts its full influence upon growth, and the real hardiness of a species is put to the test.

As a matter of fact, no one who has paid any attention to the growth of ordinary forest trees, whether indigenous or introduced, doubts the fact that the vast majority of trees grow faster in the South of England than in the north. Where can we find such specimens of Oaks, Spanish Chestnuts, English Elms, Planes, Limes, and many other trees in the north, which are so common in the south? Why does hedgerow timber never reach the length and size in the former as it does in the latter? Sylviculture does not come into play with this class of timber, and climate alone can make the difference. I am not referring so much to the small proportion of "show" trees, which are more or less famous in their particular countries, but to the average timber, which can be seen in any parish, or, when felled, in a timber merchant's yard. With Conifers of most kinds, the same difference can be noted, although it may not be quite so marked, and with a few species which like a cool, moist climate may disappear altogether, but these do not affect the question generally.

If the growth of timber in the south is more rapid than in the north, then I think we may take it for granted that Belgium is equally superior to the latter, and a careful examination of facts will prove this to be the case. I have no wish to disparage the British climate for timber growing, and as regards the quality of the timber it can grow, it is probably better than most parts of Europe, so far as the production of strength and durability are concerned. But when the truth of a simple statement, such as the one which gave rise to this discussion, is called into question, I may be excused for defending myself. *A. C. Forbes.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Thunias.—There are many deciduous or semi-deciduous Orchids which having had a decided rest during the winter months are now re-commencing to grow and will need immediate attention. Thunia Marshallii, T. Bensonæ, T. candidissima, T. alba, T. pulchra, and the hybrids T. Brymeriana and T. Veitchiana should be shaken out of their old compost and be repotted. The usual and most convenient method is to plant six or eight pseudo-bulbs about 3 inches apart, into pots of 7 or 8 inches in diameter. Use clean pots and make them nearly half full with crocks, over which place a thin turf of fibrous loam with the grass side downwards. The rooting medium should be of good yellow fibrous loam, with a moderate quantity of chopped sphagnum-moss, and sufficient small crocks to maintain porosity. Place the base of the new growths level with the surface of the soil, which should be at about half an inch below the rim of the pot. Secure each pseudo-bulb to a neat stake to hold it firmly in its proper position. Place these Thunias in the lightest position in the East Indian house or plant-stove, with the tips of the pseudo-bulbs as near to the roof glass as possible; if these bulbs have grown to an unreasonable length, cut off a portion from the top, so that the young growths at their base may be brought nearer to the light. For several weeks after repotting, very little water will be needed, but as the growths advance and the roots are seen to be spreading through the compost, gradually increase the supply, and when firmly established, occasional waterings with weak liquid cow manure will be useful. The pretty Arundina bambusæfolio and A. Philippii may be repotted in the same kind of compost and be treated as the Thunias as regards the water supply, but they thrive best in the more freely ventilated atmosphere of the Cattleya house.

Spathoglottis, Chysis, Bletias, &c.—Such plants as Spathoglottis Lobbii, S. aurea, S. Fortunei, S. plicata, S. Vieillardi, and their hybrids may be treated as advised for the Thunias, but they require rather more shade while growing. Such species as Chysis bractescens, C. aurea, C. Limminghei, C. lævis, and the distinct hybrids C. Chelsoni, C. Sedeni, and C. Langleyensis, also Anguloa Clowesii, A. Ruckeri, A. uniflora, and its varieties, develop flower-buds with the young growths, and should therefore not be disturbed by repotting until after the flowers have faded. Suspend the Chysis in a light position in the Cattleya house. Keep the Anguloas in the intermediate house. Both Chysis and Anguloas will require sufficient water to keep their roots just moist. After the flower-spikes have been cut the Chysis may be repotted into a well-drained compost of fibrous peat, leaf soil, and chopped sphagnum-moss in equal parts. Keep them in the same house throughout the growing season. Immediately the young leaves commence to unfold let the plants be placed in a house that is being vaporised, as opportunity occurs, so as to destroy small yellow thrips that may be lurking low down in the young growths. The same kind of soil will suit the Anguloas with the addition of fibrous loam in the same proportion to the other materials. Bletia hyacinthina is a deciduous plant now commencing to grow, and should at once be repotted in the same compost as used for the Anguloas. Keep the plant well exposed to the light in the coolest house. It will, if needs be, do well in an ordinary greenhouse. A liberal supply of water is needed at the root till the flowering period is past, when the quantity should be gradually decreased. Other species of Bletia when growing require the atmospheric temperature of the Cattleya or intermediate house.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Francisceas (Brunfelsias).—These are evergreen shrubs of great beauty, and most accommodating whether required for exhibition or for decorative purposes at home. By placing several plants in varying degrees of heat, they may be brought forward at intervals to flower at any season of the year. Francisceas grow freely if potted in a compost of fibrous peat three parts, leaf-mould three parts, and good loam two parts, with a liberal quantity of sand and crock siftings. During the growing season copious supplies of water should be afforded both to the roots and foliage. If the plants need repotting this should be done immediately after they have flowered, disturbing the roots as little as possible during the operation. Let the plants make their growth in an atmospheric temperature of 60° to 68°, and when the shoots have each made five or six leaves pinch out the points, and the result will be a greater profusion of flowers. When coming into bloom the plants should be removed to an atmosphere of 55° to 60°, as this will improve the quality and colour of the flowers. F. calycina and F. eximia are both desirable plants, and natives of Brazil.

Euphorbia pulcherrima (*Poinsettias*).—The old stools which have been at rest should now be prepared for making new growths to be used as cuttings. Cut back to firm-jointed wood the unripened portion of the stems, and remove the plants into an atmospheric temperature of 65° to 70°, giving the roots at the same time a good soaking with tepid water. When the shoots have grown about 2 inches or so in length, and it is seen that the roots are active, the atmosphere may be allowed to become a little cooler, and by keeping the plants close to the glass the growths will be short jointed, and in the best condition to make roots after their insertion as cuttings. These cuttings should be taken off with a small portion of the old wood attached and inserted singly into small 60 sized pots, plunging the pots in the propagating pit in mild bottom heat. A little shading may be required when repotting takes place, but every care should be exercised to secure that the plants shall not be drawn up weakly by overshading. Poinsettias are often grown in an atmosphere that is too warm and moist, and without sufficient ventilation. When the cuttings are once rooted avoid causing them any check to growth by removing them too suddenly to cooler conditions. When they have become established in their pots air should be liberally admitted to them, and the plants exposed to all the sunshine possible; such treatment will result in the growth of dwarf plants with hard wood that will not fail to produce at the proper season large, brilliant bracts.

General remarks.—Propagate a good batch of Zonal Pelargoniums for flowering in winter. For this purpose the Improved F. V. Raspail is still one of the best. All the late tubers of Gloxinia and Gesnera should be potted up. Young seedlings of these, as well as those of Begonias, should be closely attended in respect to affording water, and when large enough should be pricked off into pans. Keep the young stock of all winter flowering plants regularly potted and the shoots stopped in order to produce a bushy growth. Libonias should be trimmed over but not cut too closely. The old plants generally flower much better than younger ones. Expose them fully to the sunshine during the summer months. Celosias, Browallia elata, Petunias, Schizanthus, Balsams, &c., should be grown on into pots 7 or 8 inches in diameter to be ready to furnish the stages of the conservatory when Azaleas, &c., pass out of flower. Pot on Fuchsias, and assist herbaceous Calceolarias coming into flower by affording them frequent applications of liquid manure. Sow seeds of Primula sinensis for flowering early in autumn.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Pineapples.—Some of the fruits will now be approaching ripeness, and should be moved to a light, dry house, where they will improve both in colour and flavour. The earliest batch of "Queens" should now be afforded liquid manure from the farmyard and guano water alternately twice a week. Maintain the atmosphere in a humid condition by damping the paths and walls frequently, but when the plants flower less atmospheric moisture will be needed. Let the house containing plants that were potted last month be closed early in the afternoon, and the plants be given a syringing overhead at the same time. The roots will now be spreading in the new compost, and they should be given a good watering to thoroughly moisten the soil. Afford ventilation with great care, and especially during the spring months. The atmospheric temperature may be kept at 75° on mild nights, but if the weather is cold 5° lower will be sufficient.

Planting Vines.—If it is intended to plant young Vines, new borders are generally made for them during the preceding autumn, so that the soil may settle down and become warmed through. In cases where this was not done, the work should now be carried out without delay, as the time is close at hand when the Vines will need to be planted. Canes that are one year old are the most suitable, and the best time for planting is just when the buds are about to break into growth. It will be necessary to lay out the roots carefully in tiers near to the surface of the border. After they have been planted water them well with a rose-can, and syringe them two or three times each day, closing the house early on fine afternoons. Maintain an atmospheric temperature of 62° at night. When the Vines expand their foliage, and if they show signs of flagging, it will be advisable to syringe a little whitening and milk over the glass to provide a slight shade from sunshine until the plants have become established in the soil. Encourage them to make as much growth as possible during the season, for the more wood that is made, the better will the roots develop. If the borders are entirely inside, which is the best system for Vines intended for forcing very early in the season, they will require an abundant supply of water at their roots when in full growth.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Nemesia strumosa, introduced by Messrs. Sutton, with its profusion of Linaria-like blossoms and graceful habit, is such a delightful hardy annual, and so simple in its culture, that it is impossible to use it too freely. It is singularly well adapted for growing in shallow flat vases, or decorated boxes for placing on low walls and terrace balustrades, where if the vases are filled each with a distinct colour, they are decidedly effective. The flowers are of large size, and can be had in five distinct colours of crimson, rose-pink, rich orange, pale yellow colour, and white, while the varied tones and tints of the matured foliage are also attractions. Nemesia strumosa nana compacta is similar to the above, but the flowers are smaller, and, as its name denotes, is more compact in habit. The seed may be sown almost any month of the year, but the present is a good time to sow to have the plants in flower during May and June. They will quickly germinate without the aid of much heat. When strong enough, the seedlings should be pricked off into the vases or boxes in which it is intended to flower them, using a good rich compost of loam, leaf-mould, and cow-manure, and allowing two to three inches between each plant. They usually remain in flower for a long time, and are exceedingly attractive.

Ipomœa versicolor, a half-hardy annual, generally known as Mina lobata, a South Mexican plant, is another desirable subject for using in vases. As the plants are of climbing habit, they require staking with neat twiggy branches. The flowers, which at first are of bright rosy crimson colour, change as they expand to an orange shade, and then fade to a pale yellow colour. A square-shaped vase well filled with this Ipomœa has a very pleasing effect. The seeds should be sown now in heat, placing two or three seeds each in small pots, and then when growing freely, plant them into the vases in a compost of fibrous loam, leaf-mould, and cow-dung. The vases should remain under glass until the weather is warm enough to allow of the plants being put out without incurring the risk of receiving a check.

Salvia farinacea, though seldom seen in gardens, is an ideal plant for growing either in borders or vases. Like S. patens and S. splendens it requires protection in winter, but, like the former, it is amenable to treatment as a half-hardy annual. Seed sown now will produce strong flowering plants by June or July. The spikes of violet-blue flowers resemble very strongly Lavender spikes, for which at first glance they might very easily be mistaken. The beautiful blue colouring of the stem is an attractive feature. By selecting seedlings possessing the deepest colour and the best habit, from which to propagate by cuttings in the autumn, a very fine form could be obtained for future years. Being a strong grower, this Salvia requires liberal treatment as regards soil.

Anagallis grandiflora Phillipsii and Commelina cœlestis are two beautiful blue-flowering plants that should be sown now in heat, to plant out to flower in the summer. The latter is a perennial plant, but can be flowered in the first season from seed.

Diascia Barberæ, a perennial, is another flowering plant that can be treated as a half-hardy annual, and be sown at the present time, in heat, to flower in the coming summer. The rosy-pink, double-spurred flowers are produced abundantly during July and August. It is an excellent, dwarf plant for the front of borders, or for use in shallow boxes to be placed on low walls.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Newly Planted Trees.—These should now be pruned and trained in their proper positions. In the pruning of newly-planted trees, all the long, weak growths should be cut back to a prominent bud that will produce a strong shoot. Trained trees will possibly require to be shortened, and this will certainly be necessary in bush and standard trees, in order to get thoroughly good "leads." If the trees were not pruned, the sap would rush to the top of the shoots, leaving nearly the whole length more or less bare. At the same time no hard and fast line can be given, as all trees are not alike, and therefore the operator must be guided by circumstances. Autumn-planted trees generally "break" much better and stronger than those planted in spring, and may therefore need less pruning. In the making of any ties be careful to leave sufficient space for the shoots to swell, as young trees especially should grow very rapidly. If the shoot has not room to swell, "gumming" and other diseases may result. After this work has been completed, rake over the surface of the soil and apply a mulch, this being essential for newly-planted trees. Strawy manure from the stables is very suitable, and should be laid on thickly. If the weather is dry, a watering will be serviceable, and no trouble should be spared in getting young trees to make a thoroughly good start.

Japanese Wineberry (Rubus phœnicolasius), Logan Berry, and Raspberry.—If not already done, the growths of these should now be tied firmly to stout stakes or to strained wire. The Wineberry, which ripens between the main season of the Raspberry and Blackberry, makes it a valuable addition to this class of fruit. Newly-planted specimens should be cut to the ground line in order to promote strong growths for another season.

Preparation for Grafting.—As was advised in a previous Calendar, the scions should have been cut off and laid in under a north wall, as it is advisable to have the scions fully a fortnight later than the stock. Prepare sufficient clay, which should be free from stones, and mix with this some horse or cow manure, working it well together. This preparation is more generally used in private establishments than grafting wax, but either will answer the purpose. Those who are not familiar with the art of grafting would do well to practise the various cuts during leisure moments in the evenings. Successful grafting depends on the getting of a perfect union between stock and scion, and nothing but practice can make the operator efficient. A very sharp knife and a good eye are necessary requirements.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Spinach.—A large sowing of this vegetable may now be made with every hope of obtaining a good return at about the end of May. More often than not the seed is sown too thickly, and the thinning of the plants is neglected, with the result that the leaves are not so large or succulent, nor is the produce so plentiful as it should be. Employ the hoe on the ground between the rows of winter Spinach.

Peas.—Continue the periodical sowings of the best varieties on well-trenched ground, and sow the seed less thickly than was done for earlier sowings. There is no need to sow closer than 3 inches from seed to seed, these forming two lines. A greater percentage of well-filled pods will result from this method than from closer sowings. I have seen the haulm over 3 feet wide at the top of the stakes from a single line of seeds placed at 3 inches apart, so strongly did they branch. The distances allowed between the lines should be the same as the height of the particular variety of Peas. If the Peas will grow 6 feet in height allow the same between the lines.

Broccoli.—The sprouting varieties are now yielding plentiful supplies for the kitchen, and a note should be made of those varieties that give the greatest satisfaction. These sprouting varieties should be grown in greater numbers, as no matter how severe the frost may be they usually stand well, although most other vegetables fail. The same may be said of the old Cottagers' Kale. With so many changes in the weather Broccoli has in many places become damaged, especially where the growth had become strong and sappy. I strongly advise the planting of these on firm ground to prevent such growth.

Parsley.—Make another sowing to have plants that will yield a good supply through the summer months. I prefer to sow in boxes or frames, and transplanting the seedlings in lines drawn at a foot apart by placing each plant 18 inches from the next one. They have then a very pleasing appearance all season, especially if a good variety is used, of which "Dobbie's Selected" is a very fine strain.

Winter Onions have had a bad time lately, for having become quite large through the mildness of the winter, they are consequently not sufficiently hardy. The almost daily changes in weather have caused the plants to become somewhat brown in appearance. An extra plantation of spring-grown plants should be arranged for, and planted about the middle of April.

Red Cabbages.—Plants raised from seeds sown in the autumn should now be finally planted, to be followed in succession by those sown in boxes in the spring. They will succeed in any exposed position.

The weather.—The most severe frost of the winter or spring experienced here was on the morning of the 14th inst., when 14° were registered.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY,	Mar. 28	Liverpool Spring Flower Show (2 days).
THURSDAY,	Mar. 29	Torquay Gard. Soc. Flower Show.
FRIDAY,	Mar. 30	Roy. Bot. Soc. meet.
SATURDAY,	Mar. 31	Dutch Gard. Soc. meet.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick—44·6°.

Actual Temperatures:—

London.—*Wednesday, March 21* (6 p.m.): Max. 43°, Min. 34°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March 22* (10 a.m.): Bar., 30.2, Temp., 41°; *Weather*—Bright sunshine.

Provinces.—*Wednesday, March 21* (6 p.m.): Max. 45° Ireland N.W.; Min. 37° Southampton.

SALES.

MONDAY and FRIDAY—
Plants, Roses, Azaleas, Lilies, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

TUESDAY—
664 cases Japanese Lilies, Iris, Acers, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 1.

WEDNESDAY—
Perennials, Lilies, Hardy bulbs, &c., at 12. Roses, Azaleas, Palms, &c., at 1 and 3, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.
Roses, Palms, Shrubs, &c., at Stevens' Rooms, King Street, Covent Garden, London, W.C.

FRIDAY—
Orchids in large variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Count Kerchove.

The death of Count Oswald de Kerchove is one of those events which will engender not only profound sorrow among those who had the pleasure of his acquaintance, but will create dismay in horticultural and botanical circles in Belgium, more particularly in the Société Royale d'Agriculture et de Botanique de Gand. That society, so well known in this country for the splendour and interest of its quinquennial exhibitions and its overflowing hospitality to strangers, was sorely tried by the death of Edward Pynaert, and quite recently of its excellent secretary, M. Fierens. It now reels under the staggering blow caused by the death of its president. The Count threw himself with such zeal and energy into whatever he undertook that it is hard to imagine how his place can be filled. In the very last letter which he addressed to us, on the occasion of the death of M. Fierens, he said "We are asking ourselves whether we shall be enabled to say '*uno avulso non deficit alter?*'" With even deeper significance may this question now be asked.

It is many years since we first made his acquaintance at one of the Ghent Quinquennials, where his father, the late Count, presided. The father was Burgomaster of Ghent, and his memory is perpetuated by a monument erected at the entrance of the Park at Ghent. He it was who erected and maintained the noble winter garden so familiar to visitors at Ghent in former years, and which has been illustrated in our columns on more than one occasion.

The son followed in his father's footsteps and has for many years presided over the Society with dignity and tact. His energy, powers of work, and faculty of organisation were extraordinary. His eloquence was remarkable, and his insight and progressive ideas most stimulating. He was an ardent politician, but found time to conduct a monthly horticultural journal, in which he was the consistent advocate of the necessity for infusing scientific principles and scientific method into the operations of horticulture. A work on Palms, and a similar one on Orchids, testify to his prodigious industry and to his faculty for seizing, amid a chaos of detail, the points of most pressing importance as regards practical horticulture. Many of his articles were unsigned, others, chiefly cultural, were written over the signature of Eugène de Duren.

THE LATE COMTE DE KERCHOVE DE DENTERGHEM.
(From a portrait taken in middle life.)

He was the chief of the Directing Council of the State Botanic Garden at Brussels, and the leading spirit in all public horticultural affairs in Belgium. He was a foreign member of our Royal Horticultural Society and one of the select band of Veitch medallists.

Of his personal kindness and ready helpfulness we cannot bring ourselves now to speak more at length. We can but join in the vast concourse of horticulturists who are mourning the death of the energetic, the learned, the genial, the sympathetic Oswald de Kerchove.

Particulars of his last illness have not as yet reached us, but those who knew him and were aware of the precarious state of his health will not be greatly surprised that the end has come.

M. de Kerchove was born at Ghent on April 1, 1844, and died in the same city on March 20. The funeral took place on March 22, and, at the expressed wish of the Count, was as simple as possible, neither military honours being paid nor public discourses delivered.

Our Supplementary Illustration.—In continuation of a series of views of Sandringham which have been reproduced in these pages from time to time, by permission of His Majesty, our Supplement to the present issue affords a peep into "The Dell," which is one of the less formal portions of the garden. In our Coronation Number, published on June 21, 1902, "The Dell" was described as "a charming little scene, in which a winding stream flows rapidly through rising banks on either side. Several tall Birches, Bamboos, Rhododendrons, Ferns, etc., adorn the banks, and the view is not only a grateful retreat from brilliant sunshine, but it is a most delightful foil to the more formal features of the garden." There have been some improvements made since then, and greater variety may now be seen in the plants. One of the best of the new features is that of a bank of Bamboos on a site previously occupied by Portugal Laurels. The Bamboos are thriving well. Vitis vinifera and Clematis Vitalba climb to the top of some of the Birch and Thorn trees, and their effect in the autumn is exceedingly good. Rhododendrons, Osmunda regalis, Foxgloves, Lilium candidum, Cypripedium spectabile, and numerous spring-flowering bulbs are all pleasant features of "The Dell," which is regarded at Sandringham with much appreciation.

The Surveyors' Institution.—The next Ordinary General Meeting will be held in the Lecture Hall of the Institution on Monday, March 26, 1906, at 8 p.m., when the discussion on the paper read by Mr. Woodward will be continued.

Flowers in Season.—From Messrs. W. B. Hartland & Sons come flowers of a noble bicolor Daffodil, named Baylor Hartland. The flower is symmetrical, fragrant, some 4 inches across, the outer segments broadly ovate, the inner somewhat narrower, all whitish or of very pale sulphur yellow, the perianth as a whole resembling that of a Eucharis. The crown is bold, deep canary yellow, longer than the segments, cylindric with projecting angles, and the limb deeply scalloped and fringed. The perianth tube between the ovary and the segments is ½ inch in length, greenish and broadly funnel-shaped.

Colonial Show in the Vincent Square Hall.—Sir Thomas Fuller, Agent-General for the Cape, held a reception on Wednesday night at the hall of the Royal Horticultural Society on the occasion of the opening of the Cape Colony exhibition of fruits and other products. In introducing the Earl of Elgin, who was present, Sir Thomas Fuller said that the Cape was going to enter the lists against the other great food-producing colonies of the Empire, and the spirit of the new movement which had arisen in the colony had been demonstrated by a show in London. The Earl of Elgin, in reply, said that he was exceedingly glad to see what the Cape Government had been able to send for exhibition, as the colony would have to take a prominent part in the industrial work of the Empire. A day might come when he could offer suggestions, but at present he could only offer his congratulations and best wishes for the future to Sir Thomas Fuller and the Cape Government. The show was opened to the public on Thursday last after these pages had gone to press.

Horticultural Education in Monmouthshire.—The report of the Director of Agricultural Education of the Monmouth Education Committee is highly satisfactory. In the Horticultural Department the instruction at the Farm School, Little Mill, is highly appreciated, and the interest shown by the lads is most encouraging. Arrangements are being made to carry out demonstrations upon the pruning, planting and renovating of orchards and fruit plantations, upon lines similar to those carried on for some years past. Lessons given upon the grading and packing of fruit for market in cheap, ready-made boxes of a convenient size were again appreciated by those who grow fruit for sale,

MODELS OF INSECT PESTS.—We have received for inspection some cases containing various insect and fungus pests of gardens. The execution of the models is admirable, and they would be useful to county council lecturers or any engaged in teaching horticulture. The codlin moth, winter moth, "Canker," &c., were easily recognisable. Many are natural specimens which have been preserved. The descriptions are in German. However, the labels could easily be translated. The person to whom we are indebted for the opportunity of inspecting these is Mr. WILLIAM FRANK, 12, Red Lion Square, Holborn.

HYBRID VINES.—The *Œnophile* records the death of M. AMEDEE JURIE, the raiser of various hybrids between the European forms of Vitis vinifera and some American forms of V. rupestris × monticola. He chose this last-named hybrid as the pollen parent, having found by experience that fructification was more satisfactory when a cross was effected between V. vinifera and a hybrid raised between two American species. His cross, known as No. 102, was compounded of one-half French and one-half mixed American sap, was very prolific, but not sufficiently resistant to the Phylloxera or to the attacks of fungous parasites. He therefore crossed this No. 102 with another American form whose powers of resistance to the attacks of Phylloxera were well-established, with the result that he obtained a cross, No 251, which showed immunity from Phylloxera, but at the expense of fertility. To remedy this latter defect he crossed this same hybrid 251 with the pollen of V. vinifera. The result of this last cross, which he indicated by the number 580, presented five-eighths American and three-eights French sap, and combined important qualities, such as immunity from Phylloxera, great vigour, and sufficient productiveness. Having arrived at this result from ordinary cross-breeding, M. JURIE then, availing himself of M. DANIEL's researches establishing the existence of graft hybrids and the power of securing either amelioration or deterioration by means of grafting, endeavoured to find a stock capable of transmitting to a graft the desired qualities, or of enhancing those qualities which are not sufficiently developed. Acting on these lines M. JURIE succeeded in raising forms showing variation in form of leaf, bunches and berries, changes of sex, separation of previously mixed characters, increased power of resistance to Phylloxera, and especially improved quality of vine. It will thus be seen that M. JURIE has exercised a certain designed control over the phenomena of ordinary hybridisation. Anxious to eliminate personal bias, M. JURIE submitted the wines made from his various crosses to the judgment of experts, who confirmed his own observations.

AGRICULTURE IN THE SAND DESERTS.—The difficulties of the agriculturist whose land consists of acres of practically unirrigated sand have to be met by special treatment. Mr. THOMAS KEARNEY, in a Bulletin written for the United States Department of Agriculture, describes his visit to northern Africa, undertaken for the purpose of studying the Date Palm and its method of cultivation. This excursion was from Nefta, in south-western Tunis, to the Oued Souf, a remarkable and little known part of the Sahara desert, and the information gleaned there by him should prove valuable to agriculturists in other arid regions. In the country of the Souf there is, practically, no rainfall, and there are no streams nor springs nor flowing wells to furnish water for irrigation. The soil is a pure hard sand devoid of organic matter, and blown about in clouds by every wind, so that increasing vigilance is needed to keep the gardens free from it; also the summer heat is almost as great as anywhere in the world. Yet here the Date Palm grows in perfection, yielding fruit of better quality and in larger quantity than elsewhere in the Sahara. These are plants requiring much moisture, yet here are artificially irrigated in their first summer only, being able afterwards to obtain for themselves ground water, which is sufficiently abundant some feet below the surface of the sand. The Palms are planted in holes some 2 to 4 feet deep, and require constant watching and labour to keep them free from the drifting sand which, otherwise, overwhelms and buries them. Manure is applied to them, otherwise the plants receive but little cultivation. It is suggested that even in less tropical countries planters on sandy soils and among sand-hills should note that ground water is essential and sufficient for crops not otherwise irrigated, and that the sand-hills concentrate and reflect so much heat that the hollows among them are veritable forcing houses. Therefore, fruit grown therein might be ripened some weeks before the bulk of the crop, and would, in consequence, be of greatly enhanced value.

THE COTTON PLANT AND WEEVILS.—A curious instance of adaptation to circumstances has been brought to light by the study of the Cotton plants in Central America, which have been found to have developed numerous weevil-resisting adaptations. In comparing these specimens from Guatemala with others cultivated in the United States a series of protective adaptations has been revealed, of such number and nicety as to furnish a unique and well-nigh incredible instance of selective development. Mr. O. F. COOK, who has visited Guatemala and studied the Cotton there grown, publishes the results of his researches in a recent Bulletin of the United States Department of Agriculture. He confirms a statement previously made that the presence of the weevil-eating "kelep," or ant, has enabled the Indians of Eastern Guatemala to maintain, since very ancient times, field culture of Cotton in the presence of weevils, with the result that there has been developed a dwarf, annual, short-season variety with numerous features which, in the absence of sufficient numbers of "keleps," afford material assistance in protecting the crop against the ravages of the weevil. The Cotton plant appears to have modified even such distinctive and important characters as its involucre, nectaries, oil glands, large bolls, even the very lint itself, the better to resist its enemy. The adaptations may be divided into four groups:—1. Those calculated to avoid the weevils by general habits of growth. 2. Those which exclude the weevils, or at least hinder their operations in the buds and bolls. 3. Those which attract insect enemies, such as the weevil-eating "kelep." 4. Those which prevent the development of the weevil larvæ, even after the eggs have been laid.

COMPOUNDS (POISONOUS) FOR HORTICULTURAL AND AGRICULTURAL PURPOSES.—Mr. C. H. RICHARDS writes:—"I am pleased to inform you that the Lord President of His Majesty's Privy Council has introduced into the House of Lords a Bill known as the 'Poisons and Pharmacy Bill.' Clause 2 of this Bill reads as follows:

> 2. (1) So much of the Pharmacy Act, 1868, as makes it an offence for any person to sell or keep open shop for poisons, unless he is a duly registered pharmaceutical chemist or chemist and druggist, and conforms to regulations made under Section 1 of that Act, shall not apply in the case of poisonous substances containing arsenic, tobacco, or the alkaloids of tobacco, for use exclusively in connection with agriculture or horticulture, if the person so selling or keeping open shop is duly licensed for the purpose under this section by a local authority, and conforms to any regulations as to the keeping, transporting, and selling of poisons made under this section.

The principle of this clause is precisely that for which the Traders in Poisonous Compounds Protection Society has for some years been contending. It will be noted that the Bill provides to authorise persons (who are not chemists) to be licensed for the purpose by the local authorities to sell insecticides, weed killers, sheep dips and other poisonous substances for use in connection with agriculture and horticulture, thus carrying into effect the recommendations of the Privy Council Departmental Committee."

Publications Received.—From the Royal Botanic Gardens, Kew: *Bulletin of Miscellaneous Information.* Appendix II. 1906. Contents: Catalogue of the Library. Additions received during 1905.—Also Additional Series V. *The Wild Fauna and Flora of the Royal Botanic Gardens, Kew.*—Central Experimental Farm, Ottawa. *Results obtained in 1905 from trial plots of Grain, Fodder, Field Roots, and Potatos.* By Dr. William Saunders and Dr. Chas. E. Saunders.—*Advancement of Agriculture in Canada.* Evidence of Dr. William Saunders, Director Dominion Experimental Farms, before the Select Standing Committee on Agriculture and Colonisation, 1905.—*Bulletino della R. Società Toscand di Orticultura*, Febbraio 1906.—*Handleiding voor het Snoeien van Rozen*, J. K. Budde. A translation, by Mr. Budde, into Dutch, of the handbook lately published by our National Rose Society.

NEW OR NOTEWORTHY PLANTS.

DENDROBIUM WILSONI, ROLFE, N. SP.[*]

THIS is a beautiful and deliciously fragrant Chinese Dendrobium, which was collected by Mr. E. H. Wilson during his recent expedition on behalf of Messrs. James Veitch & Sons, and which has now flowered with the latter. Mr. Wilson met with it only in one small wood near Ya-chow, West Szechuan, at an altitude of 3,800 feet, growing chiefly on Oak trees, but occasionally on rocks, and he remarks that it was very conspicuous from a distance, and exceedingly free-flowering. It was collected in flower on May 12, 1904, and on one plant 400 fully expanded flowers were counted. It belongs to the section Eudendrobium, and is allied to the Indian D. transparens, Wall., but has considerably larger flowers of a very delicate shade of pink, with a small yellow blotch on the disc of the lip, on which occur a number of minute dark purple dots, and these extend in a broad line to the base. They vary somewhat in colour, for Mr. Wilson records them as self pink, sometimes nearly white, with a chocolate blotch at the base of the lip, over 3 inches across, borne on the old and leafless pseudo-bulbs, which latter are thin, and 1½ to 2 feet long. It is certainly a very charming thing, and an interesting addition to the ranks of cultivated species. The flowers sent by Messrs. Veitch are not equal to the wild dried specimens in size, showing that they are not yet fully established. *R. A. Rolfe.*

PRIMULA FORTUNEI.

THIS interesting plant, which is of doubtful origin, has been in cultivation nearly 50 years, having been figured by T. Moore in the *Floral Magazine*, 1860, t. 7. It there states that the figure was drawn from a plant which flowered in the nursery of Messrs. G. Henderson & Son, Wellington Road, St. John's Wood, and that it also received a certificate at one of the meetings of the Royal Botanic Society. Owing probably to its half-hardy nature it is still a very rare plant, the only one possessing it to my knowledge being Col. Beddome, Sispara, West Hill, Putney, who lately presented a plant of it in flower to the Kew authorities. P. Fortunei may be described as somewhat intermediate between P. denticulata and P. formosa. It has the coarsely dentate leaves of P. erosa without any meal, and in the present plant the stems are between 3 and 4 inches high, bearing a somewhat loose umbel of flowers. The figure in the *Floral Magazine* shows a more robust plant, much taller, and with large, dense heads of flowers after the style of P. denticulata. The upper part of the stem, as well as the pedicels and calyx, is covered with a mealy powder. The flowers are about ½ inch in diameter, bluish-lilac in colour, with a primrose yellow eye, reminding one of P. farinosa. Col. Beddome says that it requires a cold frame during the winter as it is not hardy enough to stand outside, while in the summer it is plunged outside in a somewhat shady, moist position. It produces seed although not freely, and it may also be increased by division of the crowns after the plant has done flowering. In bloom in February it is a useful plant for the cold house, and a distinct member of a large and popular genus. *W. I.*

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[*] *Dendrobium Wilsoni*, Rolfe. Pseudo-bulbs cylindrical, slender, 1½-2 feet long. Leaves oblong or lanceolate oblong, unequally bidentate and obtuse at the apex, 2-3 inches long, 6-10 lines broad. Racemes on the old leafless stems, axillary, ½ inch long, 2-3-flowered. Bracts ovate, apiculate or the lower obtuse, imbricate, 3-5-nerved, 3-4 lines long. Pedicels slender, 1-1½ inches long. Sepals lanceolate-oblong, obtuse, 1-1½ inches long. Petals elliptical-oblong, obtuse, rather broader than the sepals and about as long. Lip elliptical, obtuse, somewhat narrowed near the base, rather shorter than the sepals, 7-8 lines broad; disc tuberculate at the base. Column very short and stout. Mentum curved, obtuse, 4-5 lines long. Colour of flower blush pink, with a buff yellow blotch on the disc, minutely dotted with purple, the dots extending in a broad line to the tuberculate base. Foot of column yellow, with some purple dots and streaks. Native of West Szechuan, where it was collected at 3,800 feet altitude by Mr. E. H. Wilson, collector for Messrs. James Veitch & Sons. *R. A. Rolfe.*

KEW NOTES.

Rhododendron indicum obtusum.

This plant, better known in gardens, perhaps, by the name of Azalea obtusa, is worthy of more attention from plant cultivators. Several plants in No. 4 Greenhouse are a mass of flower. In fact, so thickly are they covered with flowers that very few leaves can be seen. The flowers are about an inch across, and may be described as of a dark brick-red colour. It is easily propagated from cuttings, branches very freely, and forms a dense bush.

Under cool greenhouse treatment it flowers in March, but if placed in a little heat it can easily be obtained in flower six weeks or two months earlier. Except in very favoured localities it is not to be recommended for open-air cultivation.

Several plants of the white variety are flowering in the same house. A curious feature of this plant is that the flowers are often streaked with red. Sometimes whole branches revert to the type; a red patch or two amongst a mass of white flowers gives it a novel appearance. *A. O.*

Tecoma Smithii ×.

A note on this plant in the issue for March 10 speaks of it as a greenhouse climber. At Kew a number of plants are flowering in No. 4 at the present time. Here it is grown as a pot plant from 1 foot to 3 feet in height; the taller plants are two years old. Treated as a climber, unless in a very sunny position, it seldom flowers well, the growths failing to ripen sufficiently.

The best method of growing it is to insert cuttings in spring. Restrict each plant to one shoot, grow them singly in 5-inch pots, near the roof-glass in a house till the beginning of July. The plants may then be stood outside in a warm, sunny position. Being in small pots, they require an abundance of water. By the end of September the growths will be well ripened, and each plant may be depended on to produce a good head of flowers. When developing the flower spikes the plants should be fed liberally with manure. Remove all the lateral shoots as they appear.

Some of the plants here are cut back after flowering and grown on a second year. Potted into 7-inch pots, each plant is restricted to three or four growths, receiving similar treatment to those in 5-inch pots. *A. O.*

MR. THOMAS SMITH, V.M.H.

Among the last batch of gardeners honoured by the receipt of this distinction is Mr. Thomas Smith, of Newry. This gentleman is well known to our readers as an enthusiastic cultivator of interesting hardy plants. The receipt of a box from him always excites curiosity, for there is sure to be something novel or interesting in it, something which makes us wonder whence he could have procured it. Mr. Smith is, we believe, of English birth, but went to Ireland many years ago, and was for several years manager of the nurseries of Messrs. Rodger McClelland and Co., of Newry. On leaving their establishment he first occupied a couple of fields facing south-east on the slope of a hill, and he has gradually extended his nursery by the purchase of the whole hill, from the top of which a splendid view of Carlingford Loch and the adjacent mountains is obtained. His nursery is now in the very foremost rank so far as hardy plants are concerned, and the proprietor is so enthusiastic and so genial that a visit is a real treat to the connoisseur. Mr. Smith devotes much of his time to landscape gardening, and has laid out and planted several interesting and beautiful gardens.

MR. THOMAS SMITH, V.M.H.

As was announced on p. 104, the other three gentlemen recently elected to receive this honour are Mr. R. I. Lynch, Curator of the Botanic Garden, Cambridge, Mr. William Marshall, and Mr. Harry J. Veitch, portraits of all of whom have already appeared in these pages.

THE PROTECTION OF FRUIT AND OTHER CROPS FROM FROST IN SPRING.

The problem of how to protect our fruit tree blossoms and embryo fruits and early vegetables from destruction by frost in spring seems as far from being solved in these days of horticultural progress and advanced scientific knowledge as it was in the rule-of-thumb days forty or fifty years ago.

The industry of fruit-growing in England has loomed large before the public mind of late. The incidental conditions bearing for and against its prosperity having been vigorously and freely discussed in lectures, public meetings, and in the Press, and, more important still, the Government has recently appointed a committee of experts to receive evidence, and to report on the fruit industry of England. Again, last autumn we had an important conference on the same subject lasting three days. Every topic that could be thought of as bearing in any way on the prosperity or otherwise of the industry was ably discussed and expounded in great detail by many of the cleverest and ablest exponents of the subject in Britain. Let us hope that their labours will bear good fruit in the near future.

The question represented by the heading of this note, namely, the protection of fruit tree blossoms and early vegetable crops from destruction by spring frosts, is worthy of the most searching inquiry and the deepest study and consideration of those engaged in horticulture. The man who finds out a practical and successful solution to this—certainly the greatest of all hindrances in the way of successful fruit growing in England—will prove to be a national benefactor.

The seasons as they come round, almost without exception, bring us rich and over-abundant quantities of fruit blossom, far more than is ever required to provide good crops. Almost with the same certainty does the cruel spring frost dodge the heel of this abundance of promise, and, with few exceptions, every season we have to deplore the partial destruction of our crops, and often, as was the case last year, nearly their complete obliteration.

I do not think this question has ever been previously considered or looked at full in the face with the object of finding a remedy. Let me relate my experience with regard to the visitation and duration of destructive spring frosts. I do not now speak of two or three degrees, of which we have frequent experience through the spring. This does comparatively no harm. It is when we have from six to ten and even fifteen degrees that the great destruction takes place. Now it so happens that this wave of severe frost sweeps across the country, according to my experience, between May 20 and 29, and, as frequently as not, the whole damage is done in one night, and certainly these severe frosts seldom extend beyond five. There are exceptions, of course. To be forewarned is to be forearmed, and the time of this visitation being thus focussed should naturally help the cultivator to successfully cope with it. I remember very well some years ago a gardener in the neighbourhood of London was very anxious for the safety of his crops on a Sunday night, May 23 or 24, owing to the indications of coming hard frost apparent early in the evening. There was much at stake—Strawberries in full bloom, Potatos, and other young and tender vegetable crops in active growth. He decided to call his men together in the evening, and, with a strong force, and a team of horses and carts, as much littery straw and other covering material as was available were carted on the ground and spread over the most valuable crops. Thus several acres were protected and saved, whilst others in the neighbourhood were totally destroyed. There were 15 degrees of frost that night and none to speak of afterwards. Coming events cast their shadows before them, and the observant man can generally tell from the appearance of the early evening whether there is going to be a hard frost during the night or not. Few people are aware how slight a covering of material is necessary to protect trees and other tender subjects from frost. A handful of strawy litter spread thinly over Strawberry plants or rows of Potatos is ample protection from a frost such as that mentioned above. I am happy to know that the precaution is now taken by most up-to-date gardeners to have some litter laid in preparation between the rows of crops at this dangerous season, so that it can be applied when danger is apprehended. For the protection of dwarf crops I do not think there is a better or more economical way than this; but in the case of fruit trees of high or moderate growth, this method would not apply, and this brings me to the method advocated and practised by Mr. Martin, of the Toddington Orchard Co., as mentioned by him at the Fruit Conference last autumn, namely, by creating sufficient heat in the atmosphere to dispel the frost by the burning of lamps at night while hard frost lasts. He states that by burning 100 lamps to the acre for four hours he was able to raise the temperature 9 degrees, namely, from 24 degrees to 33 degrees, and thus secure the safety of his crops, and at the comparatively small cost of 30s. A more detailed statement of Mr. Martin's practice, giving a few details of the size of his lamps, their price, and for how many nights, as a rule, he finds it necessary to use them, would be gratefully hailed by many readers of the *Gardeners' Chronicle*.

Some few years ago this idea occurred to me, and I had it tried on a small scale one cold night in a plantation of Strawberries in bloom. There is no doubt that the temperature can be appreciably raised in this way, provided there be sufficient lamp power; but in my case the wind was rather high, and it quickly dissipated the heat from the small area of land tried before it had time to appreciably warm the air. Sir Albert Rollit stated in these pages (see page 312, October 28, 1905), writing of this system of protecting tender crops from frost: "I have seen a similar plan in Florida applied to the culture of Pineapples in the open. There, faggot fires are kept ready to be lighted among the growing Pines, which are also protected against the effect of radiation by an open horizontal lattice-work, the open sections being about one foot square. Evidently the Florida Pine growers have discovered the same difficulty that I did in respect to the too rapid dissipation of the heat by wind, and it is evident that before this system can be successfully applied, some protection must be provided against this contingency, especially on the windy side. Let us hope that the system will be put to the proof by many this spring, so that its value or otherwise may be practically demonstrated. *Owen Thomas.*

THE MENDELIAN LAWS OF INHERITANCE.

In view of the general interest now taken in Mendel's theory of inheritance, and of the able explanation of the results of experiments given by Mr. C. C. Hurst at a meeting of the Scientific Committee of the Royal Horticultural Society on Tuesday last, the following note on the subject may held our readers the better to understand the nature of the problem. Mr. Hurst, who has obligingly contributed this communication, has himself conducted very numerous experiments in respect to animals as well as plants, some of which have served to prove the truth of certain laws laid down by Mendel.

(1) Law of Dominance.

"Mendel experimented with seven pairs of pure bred "characters" in Peas, viz., yellow and green seeds (cotyledons), round and wrinkled seeds, purple and white flowers, tall and dwarf stems, inflated and constricted pods, green and yellow pods, axial and terminal flowers. In each pair, when crossed, Mendel found the first-named character dominant over the other, which he called recessive; e.g., yellow crossed with green gave seeds all with yellow cotyledons. In this case yellow is dominant over green, which is recessive.

Mendel's law of dominance has been found to hold good in a large number of characters in many species of plants and animals; e.g., in my own experiments I have tested the following, among others (the dominant character is the one first mentioned.

Peas.—Round and wrinkled seeds; yellow and green cotyledons.

Sweet Peas.—Tall and dwarf stems (Cupid); sap-coloured and white flowers.

Primula.—Palm and fern leaf; thrum and pin-eye.

Orchids.—Sap-coloured and white flowers; spotted and striped flowers.

Poultry.—Rose and single comb; white and black plumage.

Rabbits.—Coloured and white coat; short and angora coat.

Horses.—Bay and chestnut colour; brown and chestnut colour.

(2) Law of Segregation.

In the second generation, when the hybrid dominants (D × R) (D standing for dominant, R for recessive) were self-fertilised, Mendel found that segregation or splitting of the characters took place in the ratio of three dominants, D, to one recessive, R; e.g., the hybrid yellow Peas (Y × G) self-fertilised, gave on the average 75 per cent. yellows and 25 per cent. greens, both types often appearing in the same pod. The law of segregation was also confirmed in the above experiments with various plants and animals; the recessive character, after "skipping a generation," re-appeared apparently unchanged.

(3) Law of Purity.

In the third generation Mendel found that the extracted recessives bred true, without reversion to their dominant parents or ancestors; e.g., the green Peas extracted from the hybrid yellows (Y × G) bred true greens, with no trace of yellow. Mendel also tested the dominants of the second generation, and found them to be of two kinds, in the ratio of one pure, two hybrid. The pure dominants bred true, while the hybrid dominants segregated again into 3 D : 1 R; e.g., the yellows bred from the hybrid yellows (Y × G) were one-third pure yellows which bred true, with no trace of green, and two-thirds hybrid yellows which gave 75 per cent. yellows and 25 per cent. greens.

Mendel continued these experiments through several generations, with the same result. The Mendelian formula for segregation is therefore 1 D : 2 DR : 1 R, i.e., 25 per cent pure dominants, 50 per cent. hybrid dominants, and 25 per cent. pure recessives. The law of purity was also confirmed in the above experiments with various plants and animals, the extracted recessives in all cases breeding true, with no trace of the dominant parents and ancestors.

The Mendelian Theory.

Mendel did not apparently offer any explanation of the facts of dominance, nor has any satisfactory theory of dominance yet been propounded. Mendel, however, brought forward a simple theory, which fully accounts for both the facts of segregation and purity, viz., the segregation of the gametes (germ cells) of the hybrid, so that on the average one-half of the gametes carry the dominant character and one-half the recessive character; no gamete carries both.

This is known as the theory of gametic segregation or gametic purity. On this hypothesis, the gametic constitution of the offspring of the hybrid dominants (D × R) will be, on the average, DR × DR = 1 DD : 2 DR : 1 RR, i.e., 25 per cent. pure dominants, 50 per cent. hybrid dominants, and 25 per cent. pure recessives. This result is in close agreement with the actual numbers Mendel obtained in his experiments.

Practical Application of the Mendelian Laws.

When the Mendelian characters coincide with the "points" desired by the breeder, as they do in many cases, a knowledge of the Mendelian laws will enable him to get what he wants in the shortest possible time. If the desired character is a recessive, it will breed true at sight. If it is a dominant, several individuals may have to be bred from before the pure dominant is found, but *once found it will breed true.* When several Mendelian characters are desired in combination, a much larger number of individuals will be required to secure the pure form, but once found, no "fixing" will be required; it will breed true at once. The old system of "fixing" by many years' selection leaves all to chance, and in the light of present knowledge is largely a waste of time.

When the desired "point" of the breeder is not a simple Mendelian character, but rather a compound one made up of more than the simple Mendelian unit, as is evident in certain cases, the breeder must rely on the assistance of the Mendelian experimenter, who will proceed to analyse it by exact methods; once the Mendelian elements are discovered, the compound character will be as easily worked by the breeder as a simple one.

The phenomenon of dominance apparently explains the oft-observed facts of characters "skipping a generation."

The results of recent experiments show that the law of dominance is apparently not universal, for in some cases the hybrid dominants do not exactly resemble the pure dominant parent, there being some traces of the recessive character, the dominance being incomplete. In other cases, the hybrid appears to be intermediate, and in a few cases the hybrid is different from either of its parents, and perhaps a "reversion." These exceptional cases have not yet been fully worked out, but, so far, most of them follow the Mendelian laws of segregation and purity.

The facts of dominance show that the outward appearance of an individual is often no guide at all to its breeding potentialities, and that a knowledge of its gametic constitution is the only guide to its heredity; this can only be secured by a Mendelian analysis. Recent experiments with mice, rabbits, Sweet Peas and Stocks show clearly, e.g., that the gametic constitution of albinos (whites) is often very complex.

When more than one pair of Mendelian characters are concerned in the cross, the average result can be easily calculated, e.g., a hybrid round yellow Pea will give:—

$$(3R + 1W) \times (3Y + 1G) = 9RY + 3RG + 3WY + 1WG.$$

The Mendelian laws show the necessity of breeding from single individuals, or if more than one be bred from, care should be taken that each individual of the batch has the same gametic constitution.

The facts of correlation or coupling of characters should be carefully watched and noted by the breeder, or his calculations may be upset. Last, but not least, Mendelian experiments with plants and animals have shown clearly that, as a rule, reciprocal crosses give similar results. These may serve a useful purpose in exposing once more the popular delusion that the "male parent gives the colour, while the female parent gives the form."

Many other questions of practical value are involved in the Mendelian laws of inheritance, but further experiments are necessary before one can venture to deal with them confidently. *C. C. Hurst.*

NURSERY NOTES.

ORANGE CULTURE AT MESSRS. RIVERS' SAWBRIDGEWORTH NURSERIES.

A day in early March with a strong "north-wester" blowing is not the time one would ordinarily select for visiting a fruit nursery, but even on the most inhospitable day the visitor to these nurseries can, without discomfort, enjoy a round of sightseeing, for is not this establishment famed for its orchard houses, which at the present time are both interesting and beautiful? In some the trees are in full flower, others have the fruit already set, and are pushing their young growths; potting is in operation here, budding there, and so on all through the various stages of indoor fruit culture. But perhaps the most interesting sight of all at the present time is a small house measuring 60 feet in length containing the major portion of a crop of over 500 Oranges. This Orangery is now in its full beauty, for in addition to being laden with these beautiful, golden-coloured fruits, the trees are also carrying their fragrant flowers from which next season's crop of fruits will arise, while the green of the young shoots is scarcely less beautiful. It is indeed a glorious sight, and after seeing it we wondered why Oranges are not more often grown in gardens in this country, seeing the splendid results that can be thus obtained, and at comparative little trouble and expense—certainly not more than in Peach culture under glass. It may, perhaps, be remarked that Oranges can be purchased cheaply, and, if so, why go to the trouble and expense of growing them? But how different in flavour are these hothouse fruits to imported ones! Then, again, the season when Oranges are available is one which finds our fruit houses empty, and we have little, almost nothing, in the gardens to place upon the dessert table. Oranges can be had before Christmas, and their season extends far into the spring. Another feature in their favour is that they ripen their fruits at intervals, so that one tree will furnish a succession in itself, while the fruits hang for a long period when ripe, and some that were in condition in this Orangery at Christmas time were still hanging at the time of our visit. Several houses at Sawbridgeworth are devoted to the raising and general culture of Oranges, but it is of this one fruit house that we wish more particularly to speak. It may be stated at the outset that there is nothing remarkable about the structure—indeed of the many glass houses at Messrs. Rivers' establishment this is one of the least pretentious. It is by no means new, nor does it differ in any respect from hundreds of similar span-roofed structures in gardens. Its length as stated is 60 feet, the width 15 feet, and the height, roughly speaking, about 10 feet. It is furnished with side, bottom and top ventilators, and with two sets of hot water pipes, one being level with the border to supply bottom heat, and the other is at a level with the bottom ventilators to warm the admitted air. The trees are planted, after the manner of Peach trees, at a distance of 6 feet apart, and are trained about the same distance from the glass as is usually allowed for these latter trees. We may here remark that the culture of Oranges and Peaches indoors have much in common, and, substituting one fruit for the other, one might easily imagine oneself looking down a well-furnished Peach house when viewing this Orangery. The trees are trained to the wires, the shoots being disposed evenly, and kept at about 9 inches from the glass. The branches are not allowed to reach the full height of the house owing to the dense nature of the foliage, which would, were they allowed to grow to the top, exclude almost all the light. The temperature of the house in winter is not allowed to fall below 50°, and it may be allowed to run up several degrees higher in sunshine before admitting ventilation, for the Orange does not like cold draughts. The trees are planted in the borders in a mixture of strong turfy loam and leaf-mould; no manure is incorporated in the compost, as the Orange dislikes organic manures, a little soot-water applied occasionally being all they require in this respect. Water shoud be applied judiciously, and in a somewhat similar manner as to Peach trees in borders, allowing drier or wetter conditions, according to the seasons of active growth or rest. The great secret to success in Orange culture is cleanliness; once allow the trees to become infested with mealy bug, scale, or any other pest, and the result is disaster. With clean stock at the start, however, it is a simple matter to keep them in order, and, providing they are sponged as soon as the first signs of these enemies appear, little apprehension need exist on this account. Bug is perhaps the chief source of mischief, and plants at all susceptible to the ravages of this pest should never be permitted in the house. Not much pruning is necessary if the trees are bearing freely, for like other fruiting trees the Orange does not make much growth when cropping heavily. It does not, however, mind the knife, and it is quite safe to cut hard into the old wood without fear of danger. We were shown an instance of how readily these trees will break into new growth when cut hard back. In one of the houses some trees used for furnishing scions for propagating purposes had outstripped their quarters, and it was decided to reduce their "heads" and shift them from the borders into tubs. They had been pruned severely both at their roots and branches, and placed in their receptacles. Each tree broke away into new growth, and when we saw them the young growths were full of flower buds.

Propagation.

The Orange is propagated from seed, and the ease with which it is thus increased accounts for the small advance which, until lately, was made in the quality of varieties in Orange-growing countries. But to perpetuate the best kinds—for there are named varieties—it becomes necessary to practise grafting. The Orange is worked upon the Lemon as a stock, the Lemons being raised for the purpose from "pips" or seeds. Messrs. Rivers annually raise numbers of seedling Lemons, the seeds being obtained from one of the large preserve manufacturers. These are grown for a couple of years, when they are ready for grafting. The scions are grafted in the ordinary way, and as the Orange is an evergreen the foliage is present on the graft The stock in a small pot is cut back, the scion inserted and bound with grafting cotton—a kind of coarse worsted—and the juncture smeared with a little grafting wax. The plants are then placed in a close propagating frame in a warm pit, and kept close and moist for several weeks, the light being carefully excluded with an Archangel mat. We peeped into one of these "cradles"; the plants were lying on their sides on cocoanut fibre, and all showed evidence of successful union between stock and scion. After a time a little ventilation is allowed, and this is increased as time proceeds, but they are not removed from bottom heat for several months. Messrs. Rivers raise large numbers of these trees annually, many being sold to colonial governments for distribution among the colonists. The stock at the time of our visit numbered over one thousand trees, contained in two large houses.

The Orchard Houses.

Orange culture forms but a small part of the work of the nursery. Dozens of large orchard houses are full of all kinds of fruit trees in pots, Apples, Pears, Peaches, Nectarines, Plums, Figs, Cherries, Grape-Vines, Strawberries, etc., being grown in hundreds. There are about thirty fruit houses in all, which number gives one a good idea of the extensive nature of the culture of orchard-house trees in Messrs. Rivers' nursery. One house measuring 100 feet by 20 feet, filled with Peach and Nectarine trees, was started at the commencement of the New Year. The fruits are now at their stoning period, and picking is expected to commence at about the end of next month. Every tree was well furnished with fruits, and although some thinning has been done more will be necessary. The orchard houses have floors formed of the natural soil, which is quite hard and solid; the path is rammed gravel and clay. The beds are surfaced with a thin layer of cinders. The Cherry house is a lovely sight when the trees are in full flower. These trees, many of them of great age, make but little wood, the long spurs continuing forming fruit buds year after year until they are a foot or more in length. Contrary to what might be expected, these pot trees do not wear out soon, and we were shown a tree of Magdalen Peach that had been grown continuously in a pot for 30 years. Mulberries are also seen in pots, and one grand specimen which annually bears a very large crop of fruits is about 40 years old.

Messrs Rivers have long been engaged in the raising of new varieties of fruit trees, and one may see seedling trees in all stages. Seedlings in pans were just bearing their cotyledons, while others further advanced were promising fruit for this season. It is a long and expensive undertaking, and often disappointing. Sometimes the seedling tree will produce a fruit of great promise the first year of fruiting, but the next year and after, the succeeding fruit is worthless. However, when a prize is secured, much disappointment is compensated for, such as when their newest Peach Peregrine was secured. This is a mid-season variety, said to be of robust constitution, prolific in fruiting, and described as a good all-round variety.

The trees for pot culture are selected from the nursery, only the very best shaped examples being used, and these must have a good root system, plenty of fibrous roots being essential. The work of potting trees was proceeding at the time of our visit. The roots are carefully trimmed, all broken ends severed with a clean cut, and the stoutest shortened back. The compost was rough loam with plenty of manure, and for stone fruit some mortar rubble. The potting is done very firmly, the rammer being freely worked, so that when the work is completed the tree can be lifted by the stem without drawing the plant from the pot. The trees are allowed to become established for a year or more, after which they are ready for the market.

Before concluding our visit we made a round of inspection of the outdoor departments. The extent of the nursery is, roughly, about 300 acres, and here are grown fruit trees of every description by the thousand. In addition to fruit trees, Messrs. Rivers do a large trade in Roses and shrubs. Grafting was in operation, but budding is preferred and more largely practised. Nothing is gained by the former process, and it requires 50 per cent. more labour. Two men can bud an enormous quantity of trees in the season, one inserting the bud and the other tying, whereas it takes four men to do the work of grafting—one to prepare and insert the scion, another to tie, one to place the clay on the graft, and still another to shape the "pug." In two Apple trees seen, the one grafted in the springtime and the other budded later, no difference whatever was apparent. An old Plum tree that appeared to be valued for more than its decrepitude excited our curiosity. It was split in two, and supported by props to bear the weight of the branches. This was the original seedling tree of Early Prolific Plum raised by the late Mr. Thos. Rivers in 1834. Its progeny is found in many gardens, and it is surrounded where it stands by numerous descendants, many of them venerable trees themselves. The old tree itself was full of fruit buds, although its days appear to be numbered. It is interesting as furnishing a criterion of the length of life of a Plum tree from the seed—in this case 72 years.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Independent Sectional Saddle Boilers.—It would be useful to have the opinions of gardeners, who have the above boilers in use, as to their merits and demerits, and how their capacity for heating compares with boilers of other shapes and principles. I refer to the somewhat new form which has been introduced of late years, where the boiler is made of sections which connect together by rods and screws. It is somewhat dome-shaped, with one or two flues through it above the fire, and stands quite independent of any brickwork whatever. Doubtless many are in use, as they are advertised by various firms under as many different names; but all are practically the same in principle. I was induced to try one in 1904 to replace an ordinary flued saddle-boiler with the usual brickwork setting, and so far I have nothing but praise for the newer form. It gets up heat quickly, and retains it well; there appears to be no more loss of heat from the boiler being exposed than there is from those set in brickwork, which has somewhat surprised me; and it has decided advantages over the old form in having all its joints and surfaces fully open to inspection the fact that a section can be taken out and replaced by a new one whenever a leakage appears, the easy and economical plan of setting without any brickwork, and the certainty of finding a leakage as soon as it appears, without the delay caused by cutting away brickwork. Owing to alterations in the piping when the new boiler was put in I cannot compare its consumption of fuel with that of the previous one. If anyone has one of these boilers working with the same amount of piping that another kind had, I shall be glad to know how it compares in this respect with the previous boiler. My own idea is that it is more economical, but for the above reason I cannot prove it. Is it not time we had an independent trial of all the principal boilers, carried out side by side, under carefully arranged and exactly similar conditions? I ask this question because I think we gardeners are often too conservative in our ideas; we are too timid to leave the beaten track and take up a fresh plan; and when a thing has done well we stick to it, forgetful of the fact that all things around us are in a state of change. When there is an improvement to be had it is a wise plan to secure it as soon as possible. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

Packing Seeds for the Tropics.—The discussion which for some weeks has been carried on in the *Gardeners' Chronicle* on the above important subject must be my excuse for making the following observations. A few years ago an officer in the Indian army stationed at Ferozepore wrote to me and asked me to purchase for him a set of common, old-fashioned flower seeds and forward them to him. As I lived within a few minutes of Mr. Russell's shop in Richmond at the time, I called in, and his assistant sorted out for me between 20 and 30 different sorts, including Mignonette, Carnation, Pansy, Sweet William, Wallflower, Sweet Peas, Polyanthus, etc., etc. These I had in ordinary paper packets, wrapped in brown paper. I simply addressed the parcel and sent it away. The following year I received a letter from the gentleman asking me to forward him another set from the same place, as everything had done so well. The second set was sent in exactly the same manner, and the result was quite as satisfactory. Now, if seeds of this description travel so well and germinate so well, in the hands of the veriest amateur, surely there is not so much need for any special preparation, hermetically sealed tins and so forth, as is set out as essential by the extract from Mr. Hart's letter published in the *Gardeners' Chronicle* for February 17. I may add that during the last 15 years I have had the handling of many thousands of packets of seeds coming from almost every part of the world and packed in a great many different ways, but principally in paper packets enclosed in paper wrappers, and I have found seeds from Australia, New Zealand, India, China, North and South America, Africa, and other far-away countries germinate quite as well as those received from France or from establishments in England. The greatest losses from improper packing that have come under my notice have been in such sorts as Acorns and Chestnuts; these quickly lose their vitality in a dry atmosphere and should never be packed dry; an ordinary wooden box with cocoanut fibre for packing forms an excellent means of transit. It is also well known among people who have had much to do with hardy seeds that, in some cases, a very decided change of temperature rather than being detrimental to their vegetative qualities is beneficial; for instance, such seeds as those of Cratægus, Pyrus, Rosa, Ilex, Viburnum, Acer, etc., that have been allowed to dry before being sown often take two years or more to vegetate, if sown in pots and placed in a cool house, but, if seeds that have been sown, say in March of one year, and have not germinated, are plunged out of doors in October and left quite unprotected until February of the following year, and are then placed in a temperature of 60°, germination will often take place at once. I have some recollection of seeing an article to the effect that seeds taken out on a Polar expedition and brought back after 2½ or 3 years' absence germinated well. At any rate, in the "Voyage of the Discovery," by Captain Scott, R.N., a description is given of the growing of Mustard and Cress in the ship after a winter had been spent in the ice. It would be interesting to know how those seeds were packed, as they must have been subjected to great extremes of heat and cold. A few years ago the result of some interesting experiments on the vitality of seeds after being subjected to great heat, both dry and moist, made by Sir Daniel (then Dr.) Morris, were published in the *Gardeners' Chronicle*, and quite recently the result of experiments with seeds subjected to intense cold have been published. The results of these experiments should go far to prove that extremes of heat and cold, whether dry or moist, to properly ripened seeds are not of such moment as is often supposed. *W. D.*

——Your Trinidad correspondent (see Colonial Note on page 164) seems to be greatly annoyed with my letter in your issue for January 20 last, characterising it as being "one of the most unsatisfactory pieces of evidence which it has ever been my (his) lot to discuss," suggesting, I suppose, that no reliance can be placed upon it, although, strangely enough, your correspondent immediately goes on to say that there is nothing improbable in seeds growing on a single occasion. Well, if so, "what has been shall be again." However, I have no personal experience of seeds in the tropics, and merely gave the facts as stated. In the *Gardeners' Chronicle* of the previous week there was a long and full statement from Mr. Watson, giving interesting accounts of the behaviour of seeds sent to the tropics in paper packets; but although the evidence there adduced coincided with mine to which Mr. Hart takes exception in such strong terms, he, strangely enough, ignores it! Can it be that he hesitates to cross pens with Mr. Watson and is content to fall foul of poor little me? This recalls the advice said to have been given by an old lawyer to his junior: "If you have no case, abuse plaintiff's attorney." The quoted words at the end of Mr. Hart's second sentence have no connection with the subject, but, read in conjunction with the conclusion of my letter, at least show bad taste. *A. C. Bartlett.*

Birds and Peas (see p. 173).—I have frequently lost two-thirds of the crop of early varieties by the persistent attacks of hawfinches. The jay, however, is certainly more destructive, doing almost incredible damage, and unless checked a large crop would be ruined in a few days. As with the hawfinch so with the jay; they bring the young birds with them, and I have seen several families of both amounting to dozens at once; but fortunately the attack only lasts three weeks—the time that the youngsters cannot feed themselves. After that time the birds leave the Peas alone, although odd ones may visit them through the season. Mr. Brookshank's remarks about migration can only refer to them being partial migrants, as they are resident here all the year round, more common south than north, but increasing with protection in many counties. They have also a wide geographical range over Europe to Siberia, and Japan, and India, with only slight difference in size and a few markings of plumage, comparatively like the English goldfinch and the Russian. The call notes and song of the hawfinch are very insignificant, as most naturalists describe both as little better than a chatter, and such is my experience with it both as a cage bird and in the wild state; it is regarded as one of the most mute of British birds. *G. Abbey, jun., Fanhams Hall Gardens, Ware, Herts.*

SOCIETIES.

ROYAL HORTICULTURAL.

March 20.—On Tuesday last the Hall in Vincent Square was again conveniently filled with exhibits, on the occasion of the usual fortnightly meeting of the Committees. The subjects shown included a considerable number that were dominant features at the preceding meeting, and the general effect of the show therefore was not materially different. Forced shrubs were again shown plentifully, and were very rich in floral effect. Pot-grown Clematis, flowers of Tree Carnations and Zonal Pelargoniums, also a great variety of hardy plants were among the exhibits. But Messrs. Rivers' collection of Oranges, and Messrs. Low's Acacias were not seen at the earlier meeting, nor were Messrs. Veitch's greenhouse Rhododendrons quite so fragrant, or Narcissus flowers so numerous. This was the first occasion on which the Narcissus Committee ha [illegible] they failed to find a new variety exhibited that was worth an Award of Merit.

The Orchid Committee found scarcely so many plants and flowers as there were at the last meeting, but their awards included one First Class Certificate and three Awards of Merit.

The Floral Comittee recommended three Awards of Merit, two for Roses, and one for a new Tree Carnation named Britannia.

The Fruit and Vegetable Committee had not many novelties to consider, but a good collection of well-preserved Apples was staged by the King's Acre Nursery Co., Hereford.

At the afternoon meeting upwards of sixty Fellows were elected, and Professor Geo. Henslow gave a lecture on "Parasites and Saprophytes among the Flowering Plants," which was illustrated with lantern slides.

Considerable interest was excited by Mr. C. C. Hurst's discourse before the Scientific Committee on "Mendelism."

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. C. T. Druery, Geo. Nicholson, R. Wilson Ker, T. W. Turner, Jno. Green, C. J. Salter, C. R. Fielder, H. J. Cutbush, J. F. McLeod, Jno. Jennings, W. Howe, W. P. Thomson, Chas. Jeffries, Chas. Dixon, Jas. Douglas, George Gordon, Chas. E. Shea, W. Cuthbertson, Chas. E. Pearson, W. J. James, C. Blick, and R. Hooper Pearson.

Haemanthus mirabilis grandiflorus was shown by Messrs. Linden et Cie, Brussels, and although but one small plant was sent, it was sufficient to show that the flower segments were broader than those of the type of which a supplementary illustration was published in these pages, May 25, 1901. Messrs. Linden's hybrids are among the very best plants of this genus.

From the King's Acre Nursery Company, Hereford, was shown a new Clematis of the "patens" section, with very large, pale mauve-coloured flowers, and named King's Acre Fairy. It was not thought to be sufficiently distinct to be given an Award; but the variety is evidently one that forces well, and the flowers are of very attractive colour.

Messrs. Thos. Cripps & Son, Tunbridge Wells, exhibited a collection of Japanese Acers, which was very attractive, for it included numerous varieties that had just developed their first leaves.

Messrs. R. & G. Cuthbert, Southgate Nurseries, London, were awarded a Silver Gilt Flora Medal for a brilliantly-gay group of forced flowering shrubs. Well up above the level of the dwarfer plants were standard specimens of Wistaria sinensis, Pyrus atrosanguineus, Prunus triloba, Azalea Daviesii, with smeet-smelling white flowers, and Magnolia Soulangeana. Below these the Mollis Azaleas, including such richly-coloured varieties as Anthony Koster, J. C. van Tol (red), and numerous others presented quite a thicket of flowers. There were also good plants of Spiræa Thunbergi and Cytisus purpureus flowering abundantly. Some tall plants of Palms and Lilac at the back helped to increase the effect of the exhibit.

Messrs. W. Cutbush & Son, Highgate, London, and Barnet, Herts., who showed at the last meeting an extremely large collection of forced shrubs in flower, contributed a smaller collection on this occasion, the double and single "Ghent" Azaleas and a fine new hardy Rhododendron aureum being all we noticed that were not represented in the more exhaustive exhibit. (Silver Gilt Banksian Medal.)

Messrs. Cutbush also showed Alpine plants and other hardy flowers, including a splendid batch of Iris Susiana and baskets of Roses Mrs. F. W. Flight and Mrs. William H. Cutbush.

Mr. L. R. Russell, Richmond Nurseries, Richmond, Surrey, staged a large collection of forced shrubs and other plants. These showy species—Azaleas, Laburnums, Magnolias, Spiræas, Clematis—and many similar subjects, brightened the west end of the hall. (Silver Flora Medal.)

Mr. H. B. May, Upper Edmonton, London, N., showed some nice plants of Polyantha Roses. Madame Levavasseur was included, and a free-flowering white variety named Schneewittchen. The remainder of the group was composed of Clematis in pots, relieved by a groundwork of choice Ferns and a batch of Pelargonium "Clorinda." (Silver Banksian Medal.)

Messrs. Hugh Low & Co., Bush Hill Park, [illegible]

La France, Mrs. W. J. Grant, Capt. Hayward, Mrs. J. Laing, and other first-class Roses. These, together with some well-grown Carnations and Cyclamen, completed an exhibit of considerable beauty. In another part of the building Messrs. Low staged a batch of Acacias, some being quite large specimens. They were evenly-balanced in growth, and were carrying a good crop of flowers. Three large plants of longifolia magnifica deserve mention; the other species were A. armata, A. Drummondi, A. cordata, and A. lineata. (Silver-gilt Banksian Medal.)

Roses were also staged by Messrs. Frank Cant & Co., Rose Nurseries, Colchester. They had a number of charming buds of the bronze-coloured Lady Roberts in the centre of the display, others of Mad. Jean Dupuy, some perfect specimens of the rich Papa Gontier (of true rose colour), Peace (cream yellow), Frau Peter Lambert, &c.

Messrs. William Paul & Son, Waltham Cross, Herts, put up a group of white and yellow Banksian Roses. (Silver Flora Medal.)

Messrs. Gilbert & Son, Dyke, Bourne, Lincolnshire, showed Anemone Pulsatilla and A. fulgens in the usual first-class style one is accustomed to see from Dyke. Some seedling forms of A. fulgens were included. (Silver Gilt Flora Medal.)

The Cape Government, in view of the forthcoming Colonial Exhibition, staged a number of branches of the well-known Silver Leaf Tree (Leucodendron argenteum). Leaves of this plant are largely used for ornamental purposes, book-markers, &c. (Silver Flora Medal.) An exhibit of living succulent plants and Heaths from this Colony, and another of paintings of indigenous flowers of Cape Colony, also received awards of medals.

Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea, presented a mixed group of flowering subjects. They had a number of improved forms of Clivia (Imantophyllum); a batch of the pretty Crowea angustifolia, the plants being almost hidden by their flowers; the showy Rhododendron Veitchii and others of this type; Streptosolen Jamesoni; Eupatorium petiolare, and two or three plants of Kalanchoe Dyeri. The last-named species has large corymbs of long tubular white flowers, but the habit is straggling, and it would only be effective when used with a setting of other plants beneath. (Silver Banksian Medal.)

Messrs. H. Cannell & Sons, Swanley, Kent, showed inflorescences of their strain of stellata Cinerarias, bunches of Zonal Pelargoniums, and their new flaked Carnation "Duchess of Marlborough." Among the newer varieties of Pelargoniums is Mentmore. This has very large flowers almost three inches in diameter. The colour is rosy-cerise. Frogmore has a bright scarlet marking, probably guiding-lines for insects, on a magenta ground. (Silver Flora Medal.)

Messrs. Jarman & Co., Chard, Somerset, showed a type of stellate Cinerarias, in which the petals were almost revolute. They were labelled "Cactus stellatea Cinerarias."

Lord Aldenham, Elstree (gr. Mr. E. Beckett), exhibited a large batch of Thyrsacanthus rutilans. The long pendulous racemes of this old stove-plant were well developed, and the flowers, moreover, were very deeply coloured. Adjoining were sprays of many species of Willow, some in flower, and others to show the varied colours seen in the bark of the different varieties. (Silver Flora Medal.)

Alpine plants were shown by many growers, one of the best arranged collections being staged by an amateur, E. A. Hambro, Esq., Hayes Place, Hayes, Kent. The plants showed excellence in culture, a pan of Daphne Blagayana being one of the best examples we remember having seen of this rock-garden plant. The usual subjects were included—Primulas, Ericas, Saxifragas, Scillas, Primroses, &c., and a setting of taller subjects at the background of such things as Cytisus purpureus incarnatus, Magnolia stellata Halleana, Daffodils in pots, &c., completed a first-class display.

Messrs. R. Wallace & Co., Kilnfield Nurseries, Colchester, showed many good things among Alpine and other hardy flowers.

Mr. G. Reuthe, Keston, Kent, had, in addition to a display of alpines, a number of infloresences of hardy Rhododendrons — R. Falconeri, R. arboreum, &c. R. a. cinnamomeum has pleasing flowers mottled and suffused with pink on a pale ground. Mr. Reuthe had also a display of early flowering varieties of Narcissi. (Silver Banksian Medal.)

Mr. Mortimer, Rowledge, Farnham, Surrey, displayed Carnations of first-class quality, also a white Stock named All-the-Year Round.

Messrs. Geo. Boyes & Co., Aylestone Nurseries, Leicester, showed Carnations, including some seedling varieties, one of which, named Dr. W. G. Grace, has very fragrant flowers but is not of the best form.

Mr. H. Elliott, Hassock Nurseries, Hassocks, Sussex, brought several seedling Carnations, but none was of exceptional merit.

Messrs. Richard Smith & Co., Worcester, showed a batch of a lavender-coloured variety of Hepatica angulosa, labelled H. A. lilacina grandiflora. The variety is very floriferous and pleasing in colour.

Messrs. T. S. Ware, Ltd., Feltham, Middlesex, filled one of the centre tables with Carnations, Alpines and Daffodils. Some good things were seen among the Alpine plants; we may mention Iris fimbriata, Sarracenia flava nicely in flower, Trillium sessile, Tropœolum tricolor, Eccremocarpus scaber, &c. We also noticed a good batch of Narcissus Queen of Spain among the Daffodils. (Bronze Flora Medal.)

Messrs. John Peed & Sons, West Norwood, London, staged Alpine plants, a batch of Narcissus, and some well grown pot Freesias.

Small exhibits of Alpine plants were also staged by Messrs. J. Cheal & Son, Crawley; Mr. H. C. Pulham, Elsenham, Essex; Mr. A. R. Upton, Millmead, Guildford; and Sir Edward Loder, Bart, Leonardslee, Horsham, Sussex (gr. Mr. W. A. Cook).

AWARDS OF MERIT.

Carnation Britannia.—A bright red, self-coloured Tree Carnation of large size, good petals, with very little fimbriation, but only faintly perfumed. The stems are erect, and the calyces remain unsplit. From the plants exhibited it was evident the variety is of first-rate growing habit. From Mr. A. Smith, Enfield Highway.

Polyantha Rose "Princess Ena."—This is a charming new variety of the dwarf-growing Polyantha section, being a sport from the crimson-flowered variety Mad. Levavasseur. The plant shown had growths of about 15 inches in height, and each growth bore a strong spray of rich rose-pink coloured flowers, with small, white centres, and pale yellow stamens. The individual flowers are about 2 inches across. The plant would have a very good effect in a vase. From Mr. H. B. May.

Rose, Climbing, Frau Karl Druschki.—Those who have grown the charming new Rose, Frau Druschki, of which an illustration was published in these pages on Dec. 6, 1902, p. 42, will be likely to appreciate a climbing form of the variety, in which the flowers appear to be identical with those of the type. They are almost, but not perfectly, white, and on the plant exhibited they were produced very freely and well, although it is still only March. Shown by Messrs. W. Laurenson & Son, Egglescliffe, Yarm-on-Tees.

Narcissus Committee.

Present: H. B. May, Esq. (Chairman), and Messrs. W. Poupart, Jno. Pope, E. A. Bowles, G. Reuthe, Jean de Graaffe, A. M. Wilson, C. T. Digby, P. R. Barr, J. T. Bennett-Poè, W. F. M. Copeland, A. R. Goodwin, W. A. Milner, R. W. Wallace, W. T. Ware, A. Kingsmill, Jas. Walker, Robt. Sydenham, W. B. Young, P. D. Williams, Rev. S. Eugene Bourne, Rev. G. H. Engleheart, Joseph Jacob, Rev. Canon Fowler, and C. H. Curtis.

Messrs. Barr & Sons, 11, 12, 13, King Street, Covent Garden, had Daffodils and hardy flowers. The former embraced many of the best of the early-flowering varieties. We noticed the fine Ajax, King Alfred, with splendid trumpet of deep yellow colour; Isolde, a substantial flower with sulphur-yellow trumpet, surrounded by a cream perianth, Peter Barr, the incomparable white Ajax, Seraph, a fine bold flower, the pale yellow of the big trumpet merging into the white of the perianth, King Alfonso, Victoria, Henri de Vilmorin, etc. (Silver Banksian Medal.)

Sir Josslyn Gore-Booth, Bart., Lissadell, Sligo, Ireland, staged a collection of standard and popular varieties. (Silver Banksian Medal.)

Mr. Kendall, Newton Appleford, near Ottery St. Mary, Devon, showed some remarkably fine flowers of Narcissus Sir Francis Drake. The specimens were finely coloured and were exceptionally tall.

Mr. Chas. Dawson, Rosemorran, Gulval, Penzance, staged a couple of rows of vases of Daffodils. They were quite the best of these flowers in the show, and many were varieties not in commerce. Chiquita is a well-shaped flower, with a soft yellow trumpet surrounded by a white corolla; Gannett is a fine Leedsi, the chalice being beautifully tipped with bright orange; Cachalot has an almost straight trumpet at right angles to the corolla; Goldseeker is intensely yellow; Marshlight is a beautiful Leedsi, with a grand chalice; Barkal possesses a very open, short, crenated trumpet; Cyclet and His Excellency are but a few of the many fine sorts shown by Mr. Dawson. (Silver Gilt Banksian Medal.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, H. Little, W. Boxall, W. H. Young, H. A. Tracy, H. G. Alexander, F. J. Thorne, H. J. Chapman, J. Coleman, J. W. Potter, A. A. McBean, J. W. Odell, H. G. Morris, T. W. Bond, W. H. White, A. Dye, H. T. Pitt, R. G. Thwaites, W. Cobb, G. F. Moore, F. M. Ogilvie, F. Wellesley, W. A. Bilney, N. C. Cookson, De B. Crawshay, H. Ballantine, F. Sander, and A. A. Peeters (visitor).

The largest group, which secured a Silver Gilt Flora Medal, was staged by Baron Sir H. Schroeder, The Dell, Egham (gr. Mr. Ballantine). The bulk of the group was of fine Dendrobiums, which included all the best forms of D. nobile, D. splendidissimum, and other hybrids. Of fine varieties noted were D. superbum Burkei, good D. Wardianum, Findlayanum, Brymerianum, &c. At one end was a pretty arrangement of cut spikes of the handsome Calanthe Baron Schroeder, in the centre a selection of good Cypripediums, including C. Lawrenceanum Hyeanum, C. Mastersianum, C. Olivia, &c. Other rare plants noted were the pretty Odontoglossum Leeanum, the handsomely blotched O. Pescatorei Shroederianum, and O. P. Veitchianum, which are well-known plants of many years' standing, and, strangely enough, nothing yet has appeared comparable with them out of the many large importations. Bright Masdevallias were arranged along the group, and Eulophiella Elizabethæ and other rare species were included.

Messrs. Charlesworth & Co., Heaton, Bradford, were awarded a Silver Gilt Flora Medal for a fine group principally of hybrids. Among the Odontoglossums were O. Elaine (cirrosum × Harryanum), a pretty novelty with the colours of O. crispo-Harryanum, but more of the form of O. cirrosum, and with its apiculate segments. Others were forms of O. excellens, O. loochristyense, O. Rolfeæ, O. Hallio-crispum, and a few good O. crispum. At one end was the pure white Brasso-Cattleya Queen Alexandra and a few others of its class. Among the Cattleyas were the white C. Mendeli Duchess of York and other rare forms, and others noted were Lælio-Cattleya × illustris (Latona × aurea), the very dark L.-C. Dominiana, L.-C. Wellsiana, L.-C. × Sunray var. superba, of a rich orange colour with crimson lip, and other showy hybrids.

Messrs. James Cypher & Sons, Cheltenham, were awarded a Silver Flora Medal for an effective group, in which the best plants were Cattleya calummata magnifica, a large blush-white flower finely marked with purple; Odontoglossum Adrianæ punctatum, pale yellow densely spotted with red-brown; Dendrobium nobile Perfection, D. n. Fisheri, and other fine D. nobile; D. Apollo album, D. Clio, &c.

Messrs. Sander & Sons, St. Albans, secured a Silver Banksian Medal for a good group, in which were Zygopetalum Gottianum magnificum, with blackish purple sepals and remarkable lip, violet at the base, shading to magenta-rose; Cypripedium villosum annamense, very remarkable in colour; C. villosum Golden King, a large yellow-tinted flower; C. Persephone (Lathamianum × exul); some twenty distinct varieties of C. insigne; Schomburgkia undulata, Cymbidium grandiflorum, the curious little Notylia multiflora, and other species.

Messrs. Hugh Low and Co., Enfield, obtained a Silver Banksian Medal for a nice group, in which the Dendrobiums were well displayed. Among the rarer were the pure white Dendrobium Wardianum ochrolenucum, the fine white Diacrium bicornutum, Angræcum citratum, Cypripedium aureum Hyeanum, C. Winifred

Hollington, C. Winnianum, C. microcheilum; Cattleya Trianæ cœrulea, the white C. T. Mrs. Edward Sondheim, &c.

Major G. L. Holford, C.I.E., C.V.O., Tetbury (gr. Mr. Alexander), showed a finely-coloured Cattleya Cecilia (Trianæ × Lawrenceana) and the noble white Odontoglossum crispum Iolanthe. It was a finely-grown plant, heavily flowered, and Mr. Alexander, his Orchid grower, was voted a Cultural Commendation.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), showed Dendrobium Ainsworthii, Oakwood variety, fine in form and of the colour of D. nobile nobilius; Odontoglossum ardentissimum, Cookson's variety, a broad-petalled white variety, heavily marked with purple; the rare O. excellens Prince of Orange, and O. crispum Princess Maud, a good white flower prettily spotted with light brown.

J. S. Moss, Esq., Wintershill, showed Odontoglossum amænum (Pescatorei × sceptrum), pale yellow spotted with brown. Sir Trevor Lawrence, Bart., Burford, sent the handsome yellow Dendrobium Melpomene inversum and a large branched spike of Phalænopsis Aphrodite with about 80 flowers and buds, and for which Mr. W. H. White, his grower, was accorded a Cultural Commendation.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), sent Spathoglottis aurea, Gatton Park variety. a fine form raised at Gatton with large, orange-coloured flowers, from which the red on the lip of the type has been eliminated.

Francis Wellesley, Esq., Westfield (gr. Mr. Hopkins), sent a pretty hybrid between Cattleya Mossiæ and C. Hardyana, with rosy-lilac sepals and petals tinged with yellow and rich purple lip; Cypripedium niveum Wellesleyanum, much broader than the ordinary form; and C. villosum "The Premier." (See Awards.)

F. A. Bevan, Esq., Trent Park, New Barnet (gr. Mr. Parr), sent Odontoglossum elegans, Trent Park variety.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed Dendrobium Thwaitesiæ, Veitch's variety, for which Messrs. Veitch obtained a First Class Certificate on April 19, 1904, and which is still the finest rich yellow hybrid Dendrobium; also a fine species of Eriopsis rutidobulbon.

R. Briggs-Bury, Esq., Bank House, Accrington (gr. Mr. Wilkinson), sent Cypripedium Victor Cavendish, a large flower of a greenish tint, finely spotted, and with white tip to the dorsal sepal.

O. O. Wrigley, Esq., Bridge House, Bury, Lancashire, showed the rare white Miltonia Warscewiczii alba and Odontoglossum Adrianæ Marian Bruce, a good well-marked flower.

M. Draps-Dom, Laeken, Brussels, sent two spotted forms of Odontoglossum crispum, a good O. Adrianæ, Cypripedium Leeanum aureum, C. nitens aureum, C. nitens Tarron, and other good hybrids.

M. A. A. Peeters, Brussels, sent the rare Cypripedium aureum "Pomone."

Messrs. Linden & Co., Brussels, showed Odontoglossum crispum Lucien Linden, a home-raised seedling with large, broad-petalled flower serrated at the edges, white, densely blotched with rose purple; Cochlioda vulcanica, Linden's variety, a large bright magenta-rose flower; Oncidium Phalænopsis Lindeni; Cypripedium præstans, and a yellow tinted variety of it named aurosum.

G. F. Bird, Esq., Manor House, West Wickham (gr. Mr. H. Redden), sent Odontoglossum triumphans, Bird's variety, a fine, large flower.

Captain R. P. Purefoy, R.N., Shalstone Manor, Buckingham (gr. Mr. Cordery), sent Dendrobium Dalhousieanum.

Eustace F. Clark, Esq., Teignmouth, sent three hybrid Cypripediums.

J. Bradshaw, Esq., Southgate, sent Lycaste Skinneri armeniaca, and another of the same class, named Princess Ida; the white L. S. Lady Gladys, and the finely-coloured L. S. Vulcan.

AWARDS.

First-Class Certificate.

Odontoglossum Lambeauianum roseum (Rolfeæ ardentissimum × crispum Madame Falcke).—A fine advance on the previously shown varieties. Exhibited by the raiser, M. A. A. Peeters, [illegible] A grand broad-petalled flower of a pale rose tint, heavily blotched with rose purple, the tips of the segments being unspotted.

Award of Merit.

Cypripedium villosum The Premier, from Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins).—A very massive form of much thicker substance than other villosums. The large dorsal sepal had a broad chocolate-purple band from the base, the sides of which are emerald green, the upper part white.

Lælio-Cattleya Sunray superba (L. cinnabarina × C. superba).—A showy orange-coloured flower with crimson front to the lip. There were several flowers on a spike and they were well displayed by Messrs. Charlesworth & Co.

Cypripedium aureum Hyeanum, from F. Menteith Ogilvie, Esq., Oxford (gr. Mr. Balmforth).—A large, green-tinted flower, with a brownish band on the dorsal sepal, the upper half of which is white.

Diploma Awards.

Various exhibitors showed plants of Lycastes. A *2nd Diploma* was awarded to Lycaste Skinneri Beauty, from J. Bradshaw, Esq.—A large and finely-formed, blush-white flower, with rosy crimson markings on the lip.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman), and Messrs. Jos. Cheal, W. Bates, S. Mortimer, Alex. Dean, Geo. Kelf, H. Parr, A. R. Allan, Ed. Beckett, Jos. Davis, Jno. Lyne, F. Q. Lane, G. Reynolds, C. Foster, Owen Thomas, H Somers Rivers, and A. H. Pearson.

The Committee had brought to their notice a new kind of fruit preserving bottle, in which the usual tin cap was replaced by a glass plate, and this was screwed tightly by an outer lid, consequently the fruit was always in contact with glass. The Committee awarded the invention an Award of Merit. It was shown by the Flint Glass Bottle Company, Aldersgate Street, London, E.C.

A beautiful display of Apples was shown by the King's Acre Nursery Company, Hereford. They staged over 60 dishes, all, or almost all, in splendid condition and coloured to a high degree. The latest keeping varieties appeared at their best, grand dishes of Annie Elizabeth, Tyler's Kernel, Newton Wonder, Lane's Prince Albert, Dumelow's Seedling, Sandringham, Barnack Beauty, etc., being seen. (Silver Gilt Banksian Medal.)

Messrs. Thos. Rivers & Son, Sawbridgeworth, Herts, exhibited a collection of home-grown Oranges (see p. 187). They displayed both trees and fruits in many varieties and types. The Shaddock and the Lemon were also included. (Silver Gilt Banksian Medal.)

A cultural commendation was awarded Mr. W. A. Cook (gr. to Sir Ed. Loder, Bart., Leonardslee, Horsham, Sussex) for half-a-dozen well-grown heads of Carter's Spring White Broccoli.

Lecture on Mendel's Theory of Inheritance.

In the afternoon, Mr. C. C. Hurst delivered a lecture on this subject before the members of the Scientific Committee and others. The meeting took place in the Council room, which was more than half filled with fellows interested in this subject. We refer our readers to Mr. Hurst's article on p. 187. Considerable discussion followed Mr. Hurst's discourse.

HORTICULTURAL CLUB.

Hybrid Orchids.

March 20.—Fresh from the interesting meeting of the Scientific Committee held in the afternoon, the members of the Horticultural Club and a number of guests spent a very pleasant and instructive evening at the Hotel Windsor. The subject for discussion was that of "Hybrid Orchids," and Mr. H. J. Chapman, Orchid grower to N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne, showed those assembled such a series of lantern slides illustrative of seedling and other Orchids, as we have never previously seen. There were something like 150 slides, and these were not merely reproductions of good photographs in which the effects of light and shade were unusually fine, but the pictures were all coloured in the shades natural to the flowers. Everyone present was greatly surprised at the excellent effect Mr. Chapman obtained, for each photograph had been coloured by himself and by the use of aniline dyes in water. His system was first to show the two parents, and then the resulting hybrids, which occasionally were all upon one plate, and were followed by illustrations of the secondary hybrids. After exhibiting several species of Odontoglossum and Selenipedium, a slide appeared, showing the wonderful Odontioda which resulted from crossing Odontoglossum Pescatorei with Cochlioda Notzliana, and these were also shown on the sheet. Phaius simulans and P. Sanderiana, with their hybrid × Norman, were much admired, and P. Chapmani and P. c. superba were wonderfully good. A round of applause greeted the appearance of Cypripedium Fairrieanum, which, with C. Spicerianum, produced × Niobe, having for a secondary hybrid × Norma, which was from C. Spicerianum and C. × Niobe. C. Fairrieanum, when crossed with C. callosum, produced × Juno, which is certainly one of the best of the hybrids. Passing to Cattleyas, the beautiful Lælio-Cattleya × Doris, the offspring of Cattleya Trianæ, crossed with Lælia harpophylla, was shown, and following this were all the best varieties of Dendrobium nobile. A splendid plant of D. Falconeri, suspended in a basket and carrying an unusually large number of flowers all coloured quite naturally, was much admired, the picture being perfect in respect to its light and shade effects. D. thrysiflorum was almost as good. On presenting an excellent portrait of C. Godefroyæ leucochilum, Mr. Chapman, who had something interesting to say of each picture, stated his opinion that this plant is a natural hybrid between C. niveum and C. bellatulum, although the accuracy of this view has been challenged of late. C. Chamberlainianum having given an opportunity for a humorous allusion, Mr. Chapman subsequently presented Odontoglossum crispum "Harold," one of the best florist's varieties of O. crispum, for, as was said, the flowers are almost "as round as a penny," and the colours are charming. Its petals are so imbricate that, in the Orchid grower's language, they offer a strong contrast to those through which one could "shoot sparrows." This portrait of "Harold" is considered by Mr. Chapman to be his best, but the succeeding one, O. crispum Cooksonæ, was, in our opinion, quite as good. This last-named variety was shown as a spike of blooms, and in several stages as the flowers were opening in Mr. Cookson's Orchid house.

We have only referred to some of the photographs, but, in addition, there were several that illustrated the interior of the Orchid houses at Oakfield in a most appreciable manner.

As was natural, after Mr. Hurst's explanation of the Mendel theory earlier in the day, many of those present, as well as Mr. Chapman himself, referred to the question during the discussion which took place on the hybrid Orchids. We can only refer to this discussion in very brief terms. Mr. N. C. Cookson took occasion to remark that he had found it to be impossible to cross such large and small flowers as Sophronitis grandiflora and Brassavola Digbyana with each other, unless the bigger flower was made the pollen parent, and he had come to the conclusion that the smaller grains of pollen from the smaller flower were not capable of producing tubes sufficiently long to reach the ovule of the larger flower, and were therefore ineffective. Mr. W. Watson (Kew) subsequently said that the late Mr. Mangles had told him of similar experience in the crossing of Rhododendrons, and Mr. R. A. Rolfe (Herbarium, Kew), said that in Messrs. Charlesworth's Nursery at Bradford he had been shown seed vessels in which the seeds at the upper part of the vessel alone were fertilised, which also seemed to show that the tubes were only able, even in those cases, to just enter the ovule and fertilise the seeds immediately at the top. Another gentleman (Mr. Thwaites) said that he had been able to raise seedlings from Sophronitis and Brassavola, and, as we understood him to say, he had used the Sophronitis as the pollen parent. These plants have not yet flowered. Further contributions to the discussion were made by Mr. Harry J. Veitch, Mr. William Marshall, Mr. Bunyard, jun. (who begged members to further consider the theory advanced by Mendel), Mr. H. Little, and others.

Sir John T. D. Llewelyn presided, and there were forty-five present, including a large number of guests from the R.H.S. Orchid Committee. Mr. Veitch described the evening as one of the best and most instructive he had spent in the club.

ROYAL BOTANIC.

March 21.—The first of this Society's shows for the present season was held on the above date in their gardens at Regent's Park. Unfortunately the weather during the earlier part of the proceedings was wintry in the extreme. The show itself was very bright, large masses of forced flowering trees and shrubs, Roses, Camellias, Carnations, Daffodils, and other showy subjects contributing to a pleasing display. The great conservatory was gay with many winter flowering plants arranged on the stagings and about the beds, while the permanent occupants of the beds and borders seem to improve each year under the care of the present superintendent, Mr. E. F. Hawes. There is a general improvement in the condition of the gardens and grounds.

Messrs. R. and G. Cuthbert, Southgate, Middlesex, filled the greater portion of one side of the long corridor with a display of forced flowering shrubs. (Large gold medal.)

Messrs. Wm. Cutbush and Son, Highgate, London, N., staged a grand display of forced flowering shrubs in the large conservatory. Messrs. Cutbush also had a numerous collection of Alpine plants. These were arranged in a natural manner, and embraced many of the best of these flowers now in season. (Gold medal.)

Messrs. Wm. Paul and Son, Waltham Cross, Herts, had a group of pot plants of Camellias in flower, and a number of Banksian Roses, both yellow and white varieties. The Camellias were greatly admired. The group was fairly representative, no fewer than forty-five distinct varieties being shown—Beauty of Waltham, soft blush-pink, and fine of form; Cup of Beauty, white, with just a splash of red; Jose Marques Loureiro, white; Duchess of Teck, rosy-pink, and comparatively new; Donckelaarii, one of the oldest and finest semi-double flowers, were some of the best shown. (Large silver gilt medal.)

Messrs. Thos. S. Ware, Ltd., Feltham, Middlesex, staged a large number of Alpine and hardy plants in flower, and a number of early varieties of Daffodils. Several vases of Carnations were also prominent. A batch of Corydalis bulbosa was nicely flowering. (Silver gilt medal.)

Mr. John May, Gordon Nursery, Twickenham, staged a grand collection of Cyclamen, the flowers, which were in profusion, being clean and of many beautiful tints and shades of colour. The plants were certainly well cultivated, and represented a desirable strain. The variety Excelsior, of deep crimson colour, received a certificate of merit. (Large silver gilt medal.)

Mr. A. Smith, Enfield Highway, also received a certificate of merit for Carnation Britannia. (See p. 190.)

Messrs. Jarman and Co., Chard, Somerset, displayed a type of Cineraria called Cactus stellata cineraria. The petals are rolled back, giving the flowers a quilled appearance. The selection of colours was good, and the strain was granted a certificate of merit.

Mr. S. Mortimer, Farnham, Surrey, had some charming flowers of winter flowering Carnations, and a number of spikes of a new stock named All-the-Year-Round. (Silver gilt medal.)

Messrs. Barr and Sons, 11, 12, 13, King Street, Covent Garden, had a large display of Narcissus, also boxes and vases of Alpines and hardy flowers and plants. Among the Narcissi were several new varieties, and of these three received the Society's certificate. These were Eldorado, a large yellow Ajax; Isolde, a fine Ajax variety, with sulphur-yellow trumpet and paler perianth; and Alice Knights, also of the Ajax type, with white or cream perianth and tube; awarded the distinction for its early period of flowering. (Large silver gilt medal.)

Sir Josslyn Gore-Booth, Bart., Lissadell, Sligo, had a nice stand of Irish-grown Daffodils. The varieties were not rare or new introductions, but they embraced many of the older and finer kinds of this spring flower. Thus there were Madame de Graaff, Victoria (Ajax), Oriflamme, C. J. Backhouse, Empress (fine flowers), Emperor, Stella superba, etc., all in first-class condition. (Silver medal.)

Mr. Robert Sydenham displayed a number of pots of Daffodils, the plants being grown in moss fibre without drainage.

The Royal Botanic Society exhibited a number of economic plants, many in flower—Piper nigrum, Black Pepper; Eugenia jambos, Rose Apple; Saccharum officinarum, Sugar Cane; Cinnamomum cassia, Cassia Bark, etc.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

March 8.—There was only a small display of plants at the meeting held on the above date.

Messrs. Cypher & Sons, Cheltenham, obtained a Silver Medal for a nice collection of plants.

M. Ch. Vuylsteke, Loochristi, Gand, sent a good lot of hybrid Odontoglossums, O. × Lawrenceanum being the most effective. (Vote of thanks.)

Messrs. Cowan & Co., Gateacre, displayed a nice group, and there were groups from Messrs. Keeling & Sons and Mr. D. McLeod, all of whom received votes of thanks.

The following awards were made:—First Class Certificates were awarded to Odontoglossum × Fowlerianum from Messrs. Sander & Sons, and Oncidium Weltoni var. album from O. O. Wrigley, Esq. Awards of Merit were awarded to Dendrobium × Wiganæ var. xanthochelum from Messrs. A. J. Keeling & Sons, and D. nobile var. Perfection from Messrs. J. Cypher & Sons. *P. W.*

NATIONAL CHRYSANTHEMUM.

March 14.—A meeting of the executive committee was held at "Carr's," 264, Strand, on the above date. A financial statement was produced by the secretary showing a substantial balance in hand. The schedule revision sub-committee were given power to add a sum of £20 to the Prize List, as several new classes are being added to the schedule.

ANSWERS TO CORRESPONDENTS.

⁂ Editor and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the Publisher; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the Editor. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Astilbe (Spiræa) Leaves Damaged: *H. W.* We find no trace of disease on the leaves. Their injury has been caused by scorching, either from the sun's rays when the foliage was wet, or from being placed too near the hot-water pipes in the plant house.

Book on Carpet Bedding: *Hortus.* We believe Messrs. Cannell & Sons, Nurserymen, Swanley, Kent, publish an inexpensive pamphlet on the subject.

Books: *G. C. O.* The *Glossary of Botanic Terms* would be of no use for the purpose. You need a book. You will do well to procure a copy of the *Dictionary of Gardening*, by George Nicholson, in five volumes, price £4 2s., or Johnson's *Gardeners' Dictionary*, price 9s. 6d. Either may be obtained from our publishing department.

Cucumbers Failing: *E. T.* The plants are badly infested with eel worm, which shows itself in the swollen nodules of the roots, hence it is often called root knot disease. You should not grow Cucumbers in the same structure again until you have thoroughly cleansed it, using as a wash carbolic acid mixed with water in the proportion of eight parts of water to one of the acid. Do not allow the old infested soil to be placed near the potting loam; it will be best to treat it with gas lime or a weak solution of carbolic acid, in order to destroy the pests.

Dendrobium Devonianum: *J. N. M.* This species should be cultivated in a basket or pot, which can be suspended from the roof of a warm house. Afford water freely until the new growths are completed, then gradually lessen the supply until water is withheld for the plant to rest.

Douglas Fir Failing: *Scots.* The Douglas Fir appears to have died from transplanting in a careless manner, as the roots of those forwarded possess little "fibre" or few fibrous roots. As far as appearances go they seem to be plants which have stood in the nursery for several years without transplanting, and then to have been carelessly lifted. There may be other reasons for the high percentage of deaths, but what they are it is impossible to say from the samples alone. Were the roots exposed to sun or wind for any length of time?

Grape Appley Towers: *M.* This variety is a good all-round Grape. The vine grows well and the flowers act freely. The fruits possess good flavour, and they keep well. Appley Towers is a little less prolific than some of the more popular Grapes, but it well deserves to be cultivated.

Hippeastrum (Amaryllis) Bulbs: *A. D.* We suspect the injury is caused by "mite." Meanwhile we will submit the bulbs to an examination, and reply in our next issue.

Insecticide and Peritonitis: *X.* The insecticide is of a poisonous nature, but we do not think its use in the manner described would cause peritonitis.

Mushrooms: *R. F.* It is impossible to give a decided answer without knowing the exact conditions of cultivation, but it would appear that the atmosphere in which the Mushrooms have grown was deficient in moisture. The beds have probably suffered from the same cause. Mushrooms are always tough if grown in such conditions. The syringings mentioned may not have been enough. In any case, toughness in Mushrooms is usually the result of dryness, and the best Mushrooms that are gathered from the meadows are those grown at a time when the atmosphere is well charged with moisture. We would suggest that you procure soil from another source, and obtain it moderately heavy. You might mix a small quantity with the manure during the course of fermentation. Employ a slight covering of straw for the beds, or, better still, cover them with brown paper; the moisture rising from the soil will then collect in the immediate vicinity of the young Mushrooms.

Names of Plants: *W. W.* 1, Pyrus japonica, so far as we can tell without the flowers; 2, Cupressus Lawsoniana; 3, Abies Pinsapo; 4, Cupressus Lawsoniana var. erecta viridis; 5, Cupressus, which we cannot name without the cones; 6, Skimmia japonica.—*A. Y. L.* Bletia patula and Phaius grandifolius.—*Lyminster.* Maranta Makoyana.—*Hortus.* A poor specimen, much shrivelled—probably Iris fimbriata.

Peach Shoots: *Cymrw.* The somewhat soft wood has been attacked by *Botrytis cinerea.* Remove the badly diseased shoots, and syringe the tree thoroughly with a solution of sulphide of potassium, using 1 ounce of sulphide in 3 gallons of water.

Roses; *C. R. F.* The stems have been attacked by the Rose mildew *Sphærotheca faunosa*, which has been arrested in its external development, and has consequently injured the shoots more than if it had fruited. Remove all decayed branches, and destroy any trace of mildew by spraying with a solution of permanganate of potassium at such a strength that the liquid is of a pale rose colour.

Tomatos: *T. J. H. & Chas. D.* There is no fungus disease present. We believe the injury to be due to scorching.

Tulip Mould: *S. C.* The plants are attacked by a fungus Botrytis parasitica. Burn all the diseased bulbs. Do not plant bulbs on the same piece of ground, as the black lumps or sclerotia in the soil will perpetuate the disease.

Violet: *J. McG.* Procure the variety Amiral Avellan, which, being an improvement on odorata rubra, has flowers of a reddish shade of colour.

Communications Received.—Basil L. (Your letter has been forwarded)—S. W.—A. D. H.—E. H.—The Carpenters' Company—L. G.—F. M.—J. F. D.—A. H.—B. D. J.—F. Bennett (A very good specimen of a pot-grown Hyacinth; many thanks)—M. Hayata, Japan—S. W. Barnett—Dr. Franceshi, Santa Barbara—F. J. C.—P. Murray Thomson (Forwarded)—C. C. H.—H. S.—C. E.—Bella—W. S.—D. W.—F. G. G.—R. L. C.—Sussex—F. W.—J. H.—G. H. M. E. M.—S. A.—W. H. Pettrigrew—L. Gentil.

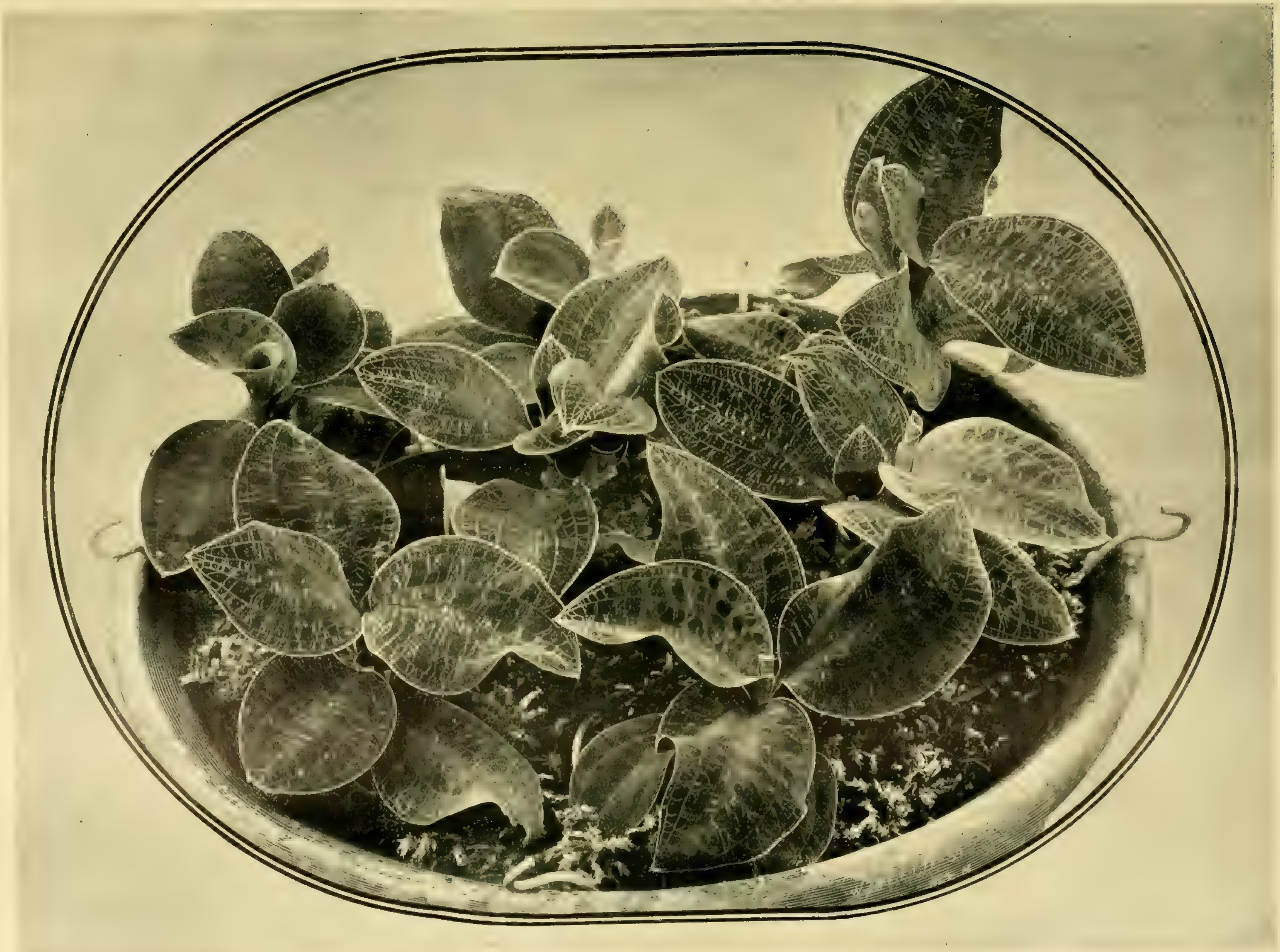

Photo by E. J. Wallis.

MACODES (ANECTOCHILUS) JAVANICA,

A DWARF-GROWING STOVE ORCHID, WITH ORNAMENTAL FOLIAGE.

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THE
Gardeners' Chronicle
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ONCOCYCLUS IRISES AND THEIR ALLIES.

TO a very large number of those who cultivate good hardy plants comparatively few genera are so full of interest as the Iris, and to those who cultivate the Iris no section of it is more fascinating than that popularly known as "Cushion Iris," the Oncocyclus Irises of the botanist. In more ways than one are these Palestine Oncocyclus Irises fascinating, for in great measure they attract by the unique beauty of their well-nigh indescribable forms, and they further possess a deeper interest for those would-be special cultivators of them who never tire in their endeavours to cultivate them better than formerly, and to solve, if possible, the problem of how best to treat them, so as to make them a permanent success in British gardens. If this very desirable stage in the cultivation of these plants should ever be reached, the gardeners of that time will be more indebted, than possibly they will then be aware of, to such indefatigable workers in this particular field of study as Sir Michael Foster, the late Rev. H. Ewbank, Mr. Lynch, of the Cambridge Botanic Gardens, and Mr. John Hoog, of Haarlem, among others. Each and all of these have worked earnestly in the endeavour to elucidate the difficulties attending the permanent cultivation of these plants.

If we compare experiences to-day with those of a score of years ago, we feel bound to admit that progress has not been great, so far as this relates to the making of these Oncocyclus Irises more permanent plants in the garden. Whether this is unattainable is a question that can only be answered after further years of experience and experiment. How far on the road to this desired haven the raising of seedlings at home may bring us is an item worthy of greater thought than the subject now receives. At the present time this phase of the work is partially neglected. I am not now referring to the raising of cross-bred seedlings, but rather suggesting that those interested in these plants should try to obtain seeds direct from the native habitats of these Palestine Irises, and in this way, and by raising seedlings at home, endeavour to perpetuate the beauty of these plants for the benefit of the rising generation of gardeners. How increasingly difficult the task becomes each year is well known to those who endeavour to grow the plants from the too frequently insignificant rhizomes now received. Nor is the difficulty diminished by a knowledge of some of the facts. The plants are lifted too early from their native haunts, have a prolonged and enforced rest, and are subsequently hurried into growth in England so soon as planted, and always in the most uncongenial of our four seasons. For let not the fact be overlooked that these imported plants in their first year in this country have obviously to make all their growth between November and April; hence it is small wonder, with weaklings only at the start, that so large a percentage flower and perish almost as a result of the same. It is in these circumstances and with these facts in mind that I suggest that these Cushion Irises may yet be grown in British gardens provided seeds be obtainable from the native habitats of the plants, and the seedlings raised in this country. Such a step, I submit, would have a sort of acclimatising effect, and by growing the young plants on quickly there would be some hope of securing that which we now lack—viz., a good, well-developed rhizome, with the expectation of it flowering in the near future. Given the well-developed rhizome—the plant—I am one of those who would emphatically declare for the annual lifting and drying as the only really effective means in this country of insuring or enforcing that absolute rest which I believe to be essential to increased longevity in these plants. I know that there exists some diversity of opinion on this point, and that some growers cover their plants with lights to throw off the wet and to give them the rest which they believe to be necessary.

This, of course, reduces the resting period to a question of degree, since all growers of Cushion Irises are agreed that rest is essential to the plant, and in imitation also of what the plant would receive in its Palestine home. When favouring a period of absolute rest out of the ground each year one's thoughts naturally incline to the yearly importations of the roots of these plants, and which rarely—very rarely—exhibit any tendency to shrivelling. Then we have the additional fact that the stronger roots produce a good flower-spike a few months later. But whether such evidences would afford sufficient proof of the utility or advantages of absolute rest to those who believe this condition is met by covering over the plants is another matter. The chief gain in my experience is in a deferred growth, thus keeping the growing point below the surface until severe frost is past, and, by assisting the plant by these means to a more deliberate, unchecked growth under more congenial conditions, assist it also to a somewhat extended longevity. Of one thing I am assured—viz., that a fairly well-developed rhizome of any Iris will endure a great amount of drying off with impunity. In so far as the annual lifting and drying off are concerned, it is interesting to record that Mr. C. G. Van Tubergen, jun., of Haarlem, has practised it from the beginning with all the hybrid and cross-bred forms now known as Regelio-Cyclus Irises. In some degree, however, M. Tubergen's method is justified by the average severity of the Dutch winter, and by the moisture-laden character of the soil. Apart from these circumstances, however, no grower of these Irises could desire better rhizomes than those I received from M. Tubergen in September, 1904, and the clean, sturdy roots, with plump growth, and buds well in check, afforded ample proof that the method of lifting each year in no sense diminished or minimised the vigour of the plant. It should here be stated that at the time of which we speak M. Tubergen had behind him the experiences of several years with these hybrid forms. That these new Regelio-Cyclus hybrids possess a vigour all their own there is no gainsaying. Here, in West Middlesex, planted in the company of some of the newer as well as the older of the Palestine Irises, the hybrids of the new race were a great success, not merely in their first growth and flowering, but equally so in the fine root development that has resulted therefrom. Indeed, the development of the rhizomes gave the impression rather of a small flag Iris, than which I think I could hardly pay a greater tribute to their vigour.

Some of the tufts I have lifted and replanted, others I have permitted to grow unchecked, unprotected, and without any attempt to enforce a resting period upon them. My motive in doing this is to estimate their probable value to British cultivators when permanently planted in our gardens, and while many will admire them as seen in flower and be tempted to grow them, others, should the lifting and drying even for a short period prove a necessity, will assuredly be debarred from making the attempt. At the present time I greatly incline to the belief that these Regelio-Cyclus hybrids are likely to prove both valuable and permanent subjects for British gardens, preferably in a sunny position. M. Tubergen has not yet given us in the new race all the unique or peculiar beauty of the choicest of the older Cushion Irises, and we have, for example, no substitute for I. Lorteti or I. alba, or even I. Gatesi; yet the group does contain some exceedingly beautiful varieties, and one at least, "Charon," I believe to be quite unique, and there are others near akin, and, again, other kinds in which the influence of I. paradoxa is clearly traceable, are very fascinating. In so far as size of blossom is concerned, the new race possesses an advantage, and still another meritorious point is that each scape is two-flowered.

In all probability, however, the time of their flowering will in the near future be cited as the greatest gain to the garden, seeing that their coming and going practically link together in one unbroken chain the Irises of the pumila group, on the one hand, with the earliest of flag Irises on the other, the new Regelio-Cyclus forms worthily filling the long-existing void, and the more worthily if, in the near future, they are found to be as good from the standpoint of permanent perennials as they are to-day good from the standpoint of intrinsic merit and beauty. *E. H. Jenkins, Hampton Hill.*

A MONSTROUS PRIMROSE.

The Primrose of which we give illustrations (fig. 73) was handed to us by Mr. Odell, and was exhibited by him at a recent meeting of the Scientific Committee. It was, in some respects, intermediate between the "stellata" forms and the ordinary sinensis, and the foliage and stem were of a deep reddish-purple colour.

But the greatest peculiarities were observable in the flowers. No two flowers showed exactly the same conditions, but, speaking generally, the calyx was much enlarged, distended at the upper portion, and of a purple colour (see fig. 73 B). Within the calyx was a corolla, the limb of which projected beyond the calyx and consisted of five purplish hairy lobes, shown at B and in section at fig. D and E.

Within the corolla and detached from it, except at the extreme base, were five stamens opposite the corolla lobes, with hairy filaments and abortive anthers occupying the mouth of the tube (thrum-eyed), or in some flowers not projecting beyond the tube (fig. F). The insertion of the stamens in the flowers represented by Mr. Worthington Smith (fig. D, E, F) was higher than in the flowers we examined, the stamens being given off from about the middle of the tube, but, as we have said, no two flowers were exactly alike.

Within the stamens was the ovary, elongated into a long pod-like organ (fig. C), with a short style, more like the pod of a Crucifer than the usually globose ovary of a Primrose. In some flowers instead of a short style the ovary terminated in five petal-like lobes (fig. D). In fig. G is shown a placenta which, instead of being raised on a long shaft, is almost sessile. Within the ovary was a basal placenta, column-like in form, and of varying length in different flowers (fig. D, E, F, G). This shaft-like placenta was surmounted by a globular head of ill-formed ovules (fig. H), a portion of which is shown more highly magnified at fig. J. *M. T. M.*

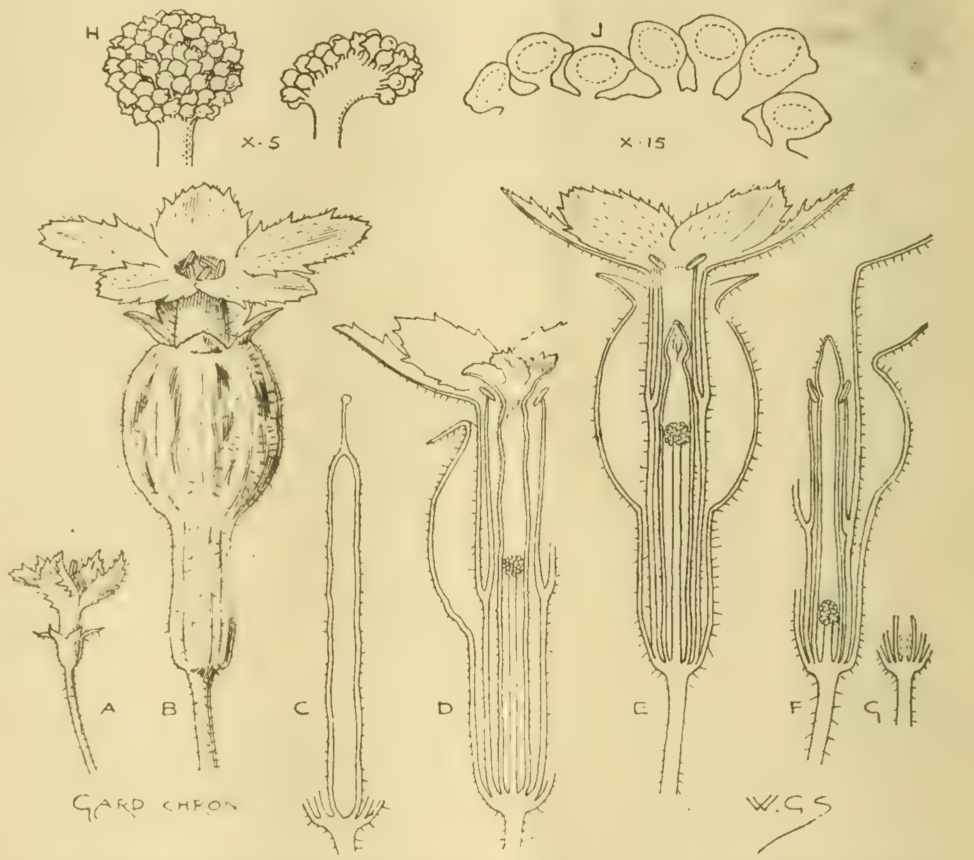

Fig. 73.—Monstrous Chinese Primrose, with calyx and corolla leafy, with ovary prolonged with a long tube, etc.

(For details see text. The figures are of real size except where otherwise indicated.)

THE MANUFACTURE OF SAMSHU (CHINESE SPIRIT) FROM SORGHUM VULGARE.

In reply to a Colonial correspondent, who, after reading Mr. Wilson's note, asked for fuller information on the subject, Mr. Wilson has kindly written us as follows:

"This industry is largely carried on in North China and Manchuria, and in a lesser degree all over China. The process, though intricate in detail and not easily described, is really very simple. Briefly, the main points are as follow:—The Sorghum grain is first crushed, then moistened, and a quantity of the ferment agent ground fine is thoroughly mixed with it. The mixture is then put into concrete pits, and trampled firmly layer upon layer. When the pit is full it is covered over with boiling husks or chaff, and a layer of adhesive clay is spread over all. (These pits are usually 10 feet deep, 7 feet long, and 2½ feet broad, and capable of holding 1,680lb. of grain.) The clay forms an air-proof cover, beneath which the chemical changes antecedent to distillation proceed. Great heat is generated, and from time to time an opening is made in the clay cover and an iron bar thrust to the bottom of the pit to test the state of the mixture, and to allow of the escape of superfluous gases.

"After 18 days the mixture has undergone sufficient chemical change, and is ready for the first distillation; the grain is partially decomposed, and has a sweet spirituous taste. The grain is now moved from the pit, and placed in a wooden steamer fitted with a lid having a round opening in the top, whereon rests a condenser with its overflow pipe and draining-tube. This steamer is fixed to a grating resting over the top of an iron pan filled to within a foot of the steamer with water. A fire is then started beneath the iron pan, and, as the water boils, the steam passes up through the spirit-laden grain, vaporising and carrying with it the spirit to the bottom of the condenser, whence it trickles down the draining tube to the receiver. The condenser is filled with cold water, and as this gets heated and escapes through the overflow pipes a fresh supply is added. After two hours the whole of the spirit has passed over, and the contents of the steamer are removed and re-packed in an empty pit for a further period of 18 days, when they are ready for a second distillation. Four or five distillations are made ere the grains are finally flung to the pigs, a certain quantity of fresh grain being added for the second and third distillations. The quantity of spirit yielded by one stilling, in which 1,680lb. of grain are used, averages about 650lb.

"The spirit is tested by adding water, and watching the quantity of froth which forms when the mixture is shaken; if one-fifth of its weight can be added to the liquor without considerable froth forming it is considered 'proof spirit.' Rectification is unknown in the distilleries, but a more palatable and stronger liquor may be procured in medicine shops, where re-distillation on a small scale is practised.

"The Samshu is packed in earthenware jars carefully stoppered with clay, and also in wicker baskets lined with tough paper. The ferment used is made in summer by mixing Barley and Peas in the proportion of three of Barley to one of Peas. The mixture is coarsely ground, and water added until a consistency of putty is reached. It is then pressed firmly into wooden moulds in size and shape like brick-moulds. The 'bricks' are then piled 4 to 5 feet high, in a room just as are bricks in a kiln, with interstices for the free passage of air. The room is kept at an equable temperature, and draughts are rigorously excluded. Fungoid growth soon appears, and the correct temperature being maintained, gradually permeates the whole brick. About forty days are necessary to complete the culture. When properly dried and stored, these ferment-bricks retain their active properties for four to five years.

"The above methods are those employed in North China and Manchuria, and I would refer those in search of further detail to 'Manchuria; Its People, Resources, and Recent History,' by Alex. Hosie, published by Methuen and Co.

"In Western China, especially Szechuan, considerable quantities of Samshu are manufactured, but here, unhusked Barley, Maize, and Sorghum, in equal proportions and all mixed together, are used. Rice-husks are added in the proportion of one part to twenty of the mixture. This mixture is first well steamed for an hour; then piled in heaps on a clean concrete floor, and boiling water added liberally. It is allowed to remain in these heaps until fairly dry, when it is spread over the floor, and pulverised ferment is thoroughly mixed with it. The whole mixture is next put into a concrete pit and covered over with clay. In this pit it remains for a month (being occasionally examined by aid of an iron bar) and is then ready for distillation.

"The process of distillation is similar to that detailed above. Four distillations are made, at intervals of a month, a small quantity of fresh grain and rice-husks being added for the second and third stillings. The quantity of spirit yielded by this mixture is much less than is obtained from the pure Sorghum in Manchuria, but of a stronger nature. The ferment used in the West of China is prepared from wheaten flour." *E. H. W.*

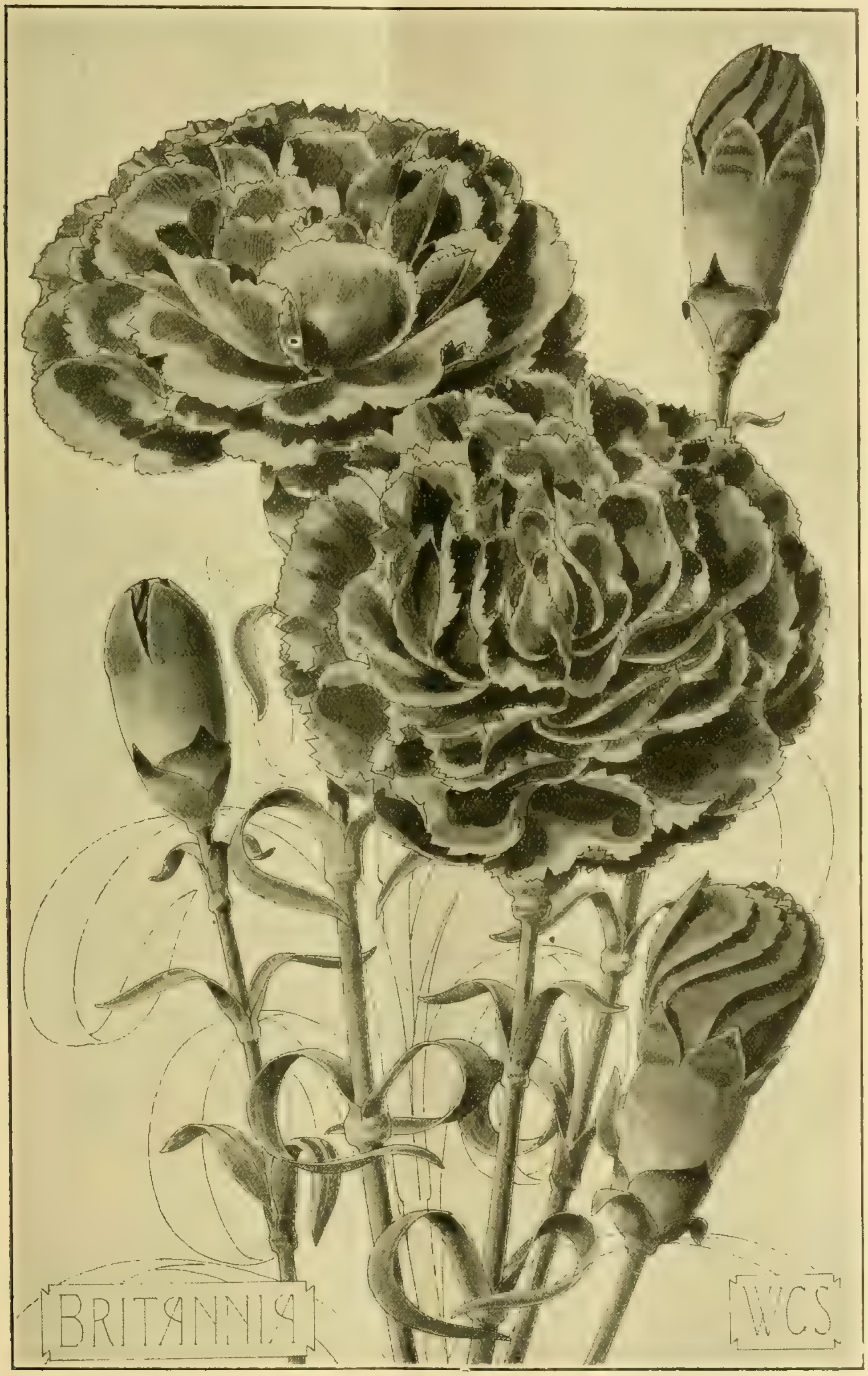

Fig. 74.—An English-raised tree carnation "Britannia," which received an award of merit from the R.H.S. on March 20 when shown by Mr. Smith, Enfield Highway. Colour of flowers, bright red.

(See *ante*, page 190.)

TREE CARNATIONS.

(Concluded from page 181.)

Culture.

My experience has been that all Carnations grown in pots for winter flowering are more or less inclined to deteriorate, but this can be checked to a great extent by careful selection of stock. When I first handled them in large quantities it was for growing plants for selling to the trade, and all the stock plants were potted on and grown under cool treatment, and not allowed to flower. The cuttings were taken while they were short and thick, that is, the side shoots before they had run out thin, and from these there was no difficulty in establishing plants that would branch out naturally and produce well-furnished specimens. There are few subjects easier to propagate than Tree Carnations, provided they are properly treated; but many fail with them through some slight neglect. In the first place, they must be taken while the stock plants are fairly moist at the roots. If the cuttings once get withered they become hard in the stem, and are sure to fail. Too much surface heat will draw them up and take the sap from the base: this is a common cause of failure. A moist, cool surface, with a good bottom heat, is what is needed, and as soon as the cuttings are rooted they should be removed to a light, airy, well-ventilated position, and potted off singly before the roots get too much matted together. From the start to finish afford them plenty of light and air. In clear, frosty weather a moderate degree of artificial heat will do no harm; but in dull weather such heat will cause weakly growth, and the flowers will not advance. The imperfect, or "sleepy" flowers, as the Americans call them, are, I believe, caused chiefly by allowing the plants to get too dry at the roots while in the bud state. The time of flowering will depend on when the plants were started and the time of stopping. With many of the sorts those propagated from good cuttings in March may be grown on without stopping; the terminal shoots will flower in the autumn, and the side shoots will follow on later. But for flowering later it may be desirable to stop all the plants at about the middle of June. Those who have taken up the culture of the American sorts have been impressed with the fact that they require plenty of root room, and I think better success would follow if our English sorts were grown in larger pots, or planted on benches in the same manner as practised by the Americans. In growing the plants on benches it is advantageous to lime-wash all the wood before putting on the soil. Some rough drainage should be used, and the soil made moderately firm when the planting is done. I have found that some are inclined to overlook the fact that it is as necessary to make the soil firm when planting them out as it is when potting plants.

Cross-Fertilisation.

For some years I was very successful in raising seedlings, but circumstances prevented me from carrying on this interesting work.

In the various crosses made I found the seed parent was of the most importance. Some varieties yield but a small percentage of good seedlings, while from others almost all would be fairly good. The first thing necessary is to select those of good habit. The pollen parent will have the most effect on colour. Indiscriminate crossing of various colours may secure some fairly good results; but the progeny is more liable to sport. A brighter hue of the same colour may be secured by taking the pollen from flowers of inferior quality, but of better colour, for fertilising those of better habit, etc. I have found it easy to get a good crimson from a scarlet flower. In all cases it is better to use the lighter shades for seeding with the pollen from those of deeper shades for fertilising with. One of my correspondents writes to me that he is crossing a yellow on Mrs. T. W. Lawson, with the idea of getting a good yellow. This may be accomplished in two or three succeeding generations; but I think it would be much easier to get a good yellow by working on to a white, or on such an one as Enchantress, which has very little colour and all other desirable qualities, and should prove a useful parent.

Substance in Carnations.

We often hear that one variety is better or will keep longer than others, but very little is said about the reasons for this peculiarity. In the first place much depends upon how and when they are cut. A bloom that has been fully expanded for some days and then cut while the plant may be dry will last but a short time; but if the plant has been watered overnight, and a bloom that is barely expanded be cut early in the morning, the bloom would last fully a week. I do not mean to suggest that there is no difference in the varieties, for I have found that there is. In those with thick fleshy stems the water is taken up freely, and consequently the flowers last better than those with the thin wiry stems. Also those which have some pollen and are readily fertilised fade quickly. I have found when pollenising for seed purposes, that as soon as a flower is properly impregnated, the petals fade quickly, while those which prove abortive last much longer. With a little observation it becomes easy to tell when a flower is successfully fertilised. A very dry, heated atmosphere will cause Carnation flowers to curl up quickly. *A. H.*

ORCHID NOTES AND GLEANINGS.

MESSRS. JAMES CYPHER & SON'S COLLECTION.

THE nurseries of Messrs. Cypher in the Queen's Road, Cheltenham, have for many years been reckoned among the attractions of that health resort. Orchids have always been well grown there, and they have gradually required more space until now they occupy twenty of the seventy plant-houses on the place, and the plant-houses find occupation for forty of the seventy men and boys employed by the firm. It is one of the few remaining nurseries in which all branches of the trade are carried on successfully, and although the Orchids take the lead they have never been allowed to exclude other equally worthy plants. The Orchid houses are chiefly commodious span-roofed structures, and in the arrangement of the plants in them as many as possible are suspended from the roof, and the others brought well up to the light by elevated staging. Tanks for storing rain water are arranged beneath the central staging or in other convenient parts of the houses, and in most of the Orchid houses there are small rockeries arranged beneath the staging, in which Begonias and other foliage plants grow, and assist in preserving a moist atmosphere. The material used for potting Orchids has here varied but little from the first. Good fibrous peat and sphagnum-moss are used when obtainable for most epiphytal Orchids, but, as good Orchid peat is not always procurable, Polypodium fibre is found to be an excellent substitute. All classes of Orchids are grown with less heat than in most gardens, a reasonable amount of ventilation is given, and shading is as little used as possible. The plants make good growth and large pseudobulbs, having hard tissues, and the colours of the flowers are developed in their brightest tints.

In the first large span-roofed intermediate house there is at the present time a display of fine varieties of Cattleya Trianæ, varying considerably in colour. With them in bloom are some examples of the scarlet Epiphronitis Veitchii, Lælio-Cattleya luminosa, a very handsome L.-C. × Dominiana, the white Cattleya intermedia nivea, a quantity of varieties of Cypripedium Lathamianum, and C. Leeanum, of which the finely formed C. Leeanum Cypher's variety, C. L. giganteum, and C. L. virginale are the best. Overhead are suspended a very large number of hybrid Lælio-Cattleyas, Brasso-Cattleyas, etc., of flowering size, and the whole of one side of the house is filled with a great variety of hybrids approaching the flowering stage. As a remarkable instance of the quantity of flowers to be obtained from vigorous and well-grown Lælio-Cattleyas, Mr. John Cypher called attention to one strong and beautifully grown plant which had produced from a single lead three stout pseudo-bulbs, each with a large flower-sheath sending up bloom. Other examples of good culture were some magnificent specimens of Lælia purpurata and of Cattleya Bowringiana furnished with flower-sheaths.

The next, and rather warmer division, has some strong plants of Phalænopsis Rimestadtiana in bloom, several plants of Cypripedium niveum, a remarkably fine C. Chamberlainianum, the reddish-scarlet Renanthera Imschootiana, Angræcum citratum, A. articulatum, a distinct and pretty hybrid between Cypripedium Lathamianum and a dark C. Leeanum, of fine colour; C. villoso-exul, C. aureum Lambianum, like a green-tinted C. a. Surprise, C. Mastersianum, and a rather effective hybrid from it, together with some other unnamed hybrids.

Another large Cattleya house has a number of the fragrant Cattleya Schröderæ in bloom, also C. amethystoglossa, and a very fine variety of C. calummata with four finely coloured flowers on one spike; brightly coloured Epidendrum O'Brienianum and the yellow E. xanthinum. Overhead are suspended numbers of Odontoglossum citrosmum with enormous pseudo-bulbs, the young growths being ready to send out spikes. With regard to these it is a common belief that unless the plants are severely dried off, the growths get ahead of the flower spikes and the flowers are not produced. Mr. Cypher merely reduces the supply of water and finds the spikes are freely produced nevertheless in his well ventilated intermediate house. If rigorously dried off annually such large bulbs would not be made.

Dendrobiums are a special feature at Messrs. Cypher's, and this year they have been unusually fine, for the houses have been gay with bloom for several weeks past and are still good. The best varieties of D. nobile are favourites, and the finest example is the home-raised seedling D. nobile "Perfection," for which an award of merit and the Society's diploma were given at the Royal Horticultural Society's meeting on March 6 last. Some other seedlings of the same batch, also in bloom, show very fine qualities. Of others in bloom D. nobile Cypher's variety was one of the prettiest. D. n. Statterianum, large and distinct in colour, D. n. nobilius, D. n. Ballianum Amesianum, two forms of the white D. nobile, also fine D. Wardianum and D. crassinode album were noted. Of hybrids in bloom a fine show was made with D. Apollo album and grandiflorum, D. rubens grandiflorum and magnificum, D. Wiganiæ and its fine yellow variety xanthocheilum; D. Ainsworthii Cypher's variety, D. Aurora, D. Clio, D. Cybele nobilius, and a great many others. The Dendrobiums are grown in a warm and moist atmosphere, and they are freely watered until the bulbs are fully made up and resting preparatory to the flowering season. Some of the specimens have pseudo-bulbs of extraordinary thickness, and all are stout in proportion to their length.

The next house contains a great number of the best varieties of Cypripedium insigne. The largest is C. i. "Harefield Hall," of which there are seven or eight very fine plants, and still one in flower. The prettiest is represented by a flower of the new C. insigne "Ethel Cypher," which is remarkable in several points apart from its general beauty. The broad round dorsal sepal has the base of a glossy, yellowish green with raised chocolate spots, the whole of the margin from base to tip having a pure white band about half an inch wide, and almost equal throughout, the white not being confined to the upper part, as is usually the case. The petals and lip have a yellowish hue, and the petals wavy edges. It is a variety which will be a favourite. Of yellow varieties there is a full collection, though C. i. Sanderæ and C. i. Sanderianum are still the favourites. In bloom in the same house are plants of Cymbidium Tracyanum, good Cypripedium villosum, C. Boxalli, Zygopetalum crinitum, etc.

The collection of Lælia anceps is in fine condition, but now nearly past the flowering stage, only a good L. a. Schröderiana and a few coloured varieties remaining. The cool houses have a fine collection of Odontoglossums and Masdevallias, some groups of O. Pescatorei, O. crispum, O. Andersonianum, O. triumphans, O. Adrianæ, and others making a pleasing show, which may be seen by the traveller on the public highway, for some of the groups are arranged at the ends of the houses abutting on the road. With these are fine scarlet-coloured Sophronitis, rose-coloured Pinguicula caudata, and of Masdevallias M. Veitchii gigantea, and other brightly coloured kinds. On one side is a nice lot of the true but rare Odontoglossum nævium majus; some fine specimens of Oncidium concolor have each from seven to eight spikes of clear yellow flowers. In one house is a selection of coloured Lycaste Skinneri, with several of the best pure white forms. A batch of Miltonia vexillaria is flowering profusely, with a few M. Bleuana superba. Odontoglossum pulchellum majus has a good supply of white flowers.

Cypripediums are in great profusion, the best of those still in bloom being C. aureum virginale, C. Niobe Westonbirt variety, C. triumphans, some good C. nitens, C. Mons. de Curte, Swinburne's variety, C. Thompsonianum, C. Madame Jules Hye and C. caudatum, of which there are several nice plants.

In one house a selection of the best scarlet Anthuriums are furnished with their large scarlet spathes; two superb forms of A. Scherzerianum are known as Wardianum and Cypher's variety. A. s. Rothschildianum has spathes mottled with scarlet, and others are grouped with them.

In the show plant-houses the large specimens of Allamandas, Stephanotis, Bougainvilleas, Rondeletias, Ixoras, Ericas, Statices, and other large specimens of stove and greenhouse plants are being prepared for flowering. In other houses Codiæums, Cordylines, Dracænas, Marantas, and other decorative plants are well grown and attractively displayed; while still another department is devoted to the growing of plants for producing flowers for cutting. *B., March 16.*

PLEIONE YUNNANENSIS.

A GOOD illustration of this interesting species, lately exhibited by Messrs. Sutton (February 13, 1906), is given in the March number of the *Orchid Review*. The plant was awarded a Botanical Certificate as an interesting novelty by the Scientific Committee.

ORCHID SALES.

RECORD PRICE FOR AN ODONTOGLOSSUM.

THE sale of one hundred and twenty-two rare Orchids from the famous collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill, took place, as announced, at the Central Sale Rooms of Messrs. Protheroe and Morris, 67 and 68, Cheapside, London, on Thursday, March 22. The greater number of the leading Orchidists, both British and Continental, were either present or represented. The result proved a record sale, the small number of plants realising in the aggregate £5,342. The Odontoglossums for which the collection is celebrated realised the highest prices, and of them the small healthy plant of the magnificent Odontoglossum crispum Pittianum (see Fig. 75) reached the record price of 1,150 gs., Messrs. Sander and Sons being the purchasers. The same firm secured O. crispum "Fearnley Sander" for 300 gs., and others. Norman C. Cookson, Esq., obtained O. crispum "Abner Hassall," 470 gs., O. Pescatorei Pitt's variety, 120 gs., and some others. A. Warburton, Esq., secured O. crispum "F. K. Sander" for 800 gs.; W. Bolton, Esq., of Warrington, a small O. crispum Lindeni, 110 gs., and a good selection at lower prices. Messrs. McBean, Cooksbridge, bought O. crispum Persimmon for 290 gs. Messrs. Jas. Cypher and Sons, Cheltenham, gave 400 gs. for O. crispum Pittiæ, and relatively good prices were paid for other lots by Major G. L. Holford, Francis Wellesley, Esq., J. Wilson Potter, Esq., Jeremiah Colman, Esq., Messrs. Hugh Low and Co., Messrs. Charlesworth, and other buyers. The first plant in the sale, Zygopetalum Perrenoudii "Cecil Rhodes," went to the collection of J. Gurney Fowler, Esq., the treasurer of the Royal Horticultural Society, and chairman of the Orchid Committee, together with a number of other good Odontoglossums, Cattleyas, etc. There was quite an international assemblage, M. Jules Hye de Crom, M. Chas. Vuylsteke and his son, M. A. A. Peeters, M. Draps-Dom, Mr. Otto Beyrodt, and others being present. The auctioneer, Mr. Harold G. Morris, had an appreciative audience, and bids came freely.

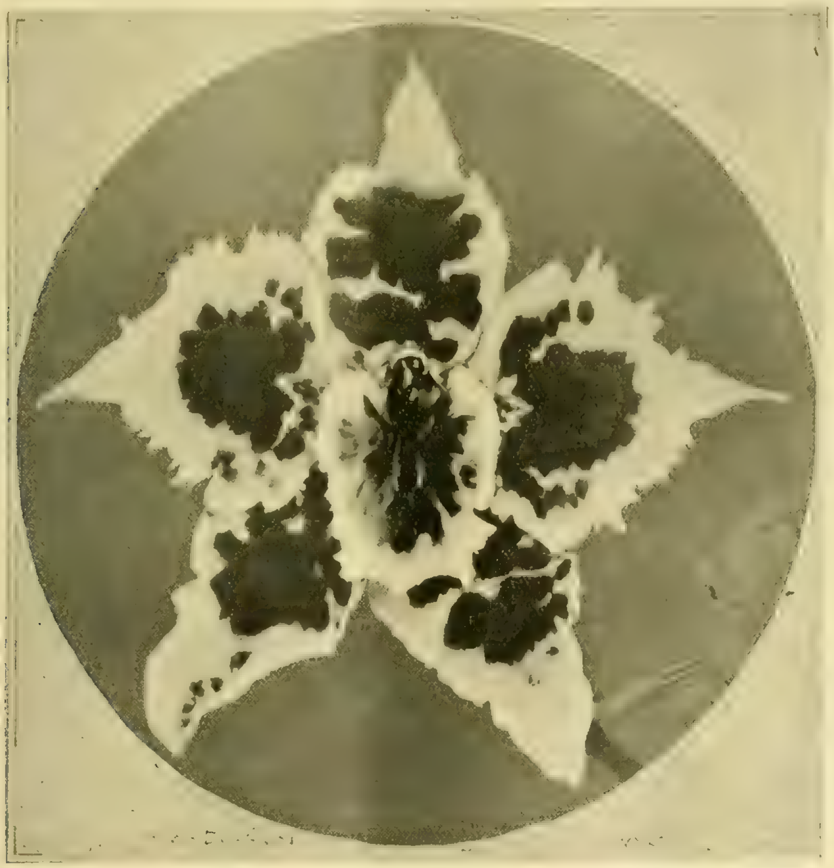

Fig. 75.—Record price for an Odontoglossum—O. crispum Pittianum, as it was shown five years ago.

Orchids from Bank House.

At a sale on Friday, March 23, in which duplicates from the Bank House collection of S. Briggs-Bury, Esq., were offered some very handsome Odontoglossums from M. Chas. Vuylsteke, and rare Orchids from other growers were included. The same company was present as at the previous day's sale, and the results were equally satisfactory. Lot 111, Odontoglossum crispum Luciani, brought 350 gs.; 125, O. crispum Empress of India, 300 gs., and another plant of it, 230 gs.; 132, O. crispum "Mrs. F. Peeters," 150 gs.; 143, O. crispum "Queen Victoria," 65 gs.; 145, O. crispum "Oakfield Sunrise," 210 gs. One of the most beautiful flowers, and by far the most remarkable, was a fine purple blotched Odontoglossum sent by M. Chas. Vuylsteke, and about which there were conflicting opinions as to whether it was to be considered a crispum or an ardentissimum. It had considerable resemblance to O. ardentissimum in the sepals and petals, but the labellum indicated O. crispum. Sold without name or qualification, it was acquired by De B. Crawshay, Esq., for 300 gs., a plant of O. ardentissimum in the next lot realising 140 gs. An importation of Cypripedium Farrieanum sold on the same day made fairly good prices throughout, the day's sale amounting to £3,974. These two sales seem to indicate that the Orchid trade is still good, for rare plants at least!

NOTICES OF BOOKS.

Exotic Forest and Park Trees for Europe. (*Fremländische Wald und Parkbäume für Europa.*) By Dr. Heinrich Mayr, Professor in the University of Munich. Berlin, Paul Parey; London, Williams & Norgate.

This very important book will be welcomed by all lovers of trees who understand German, and, as a whole, is by far the best account of the forests and trees of the North Temperate zone that has appeared in any language. The most valuable part of the book is derived from the personal observations of the author, who describes in detail the forests of North America and of the Old World. The part relating to Europe is, however, much less complete and interesting than that relating to Japan, where the author lived for several years. He describes the various regions of the latter country with great accuracy, but passes by the equally important and interesting forests of Siberia and the Caucasus too briefly; though he gives a better account of Korea and of North China, which he visited in company with Prince Rupprecht of Bavaria in 1903. The second part of the book is a comparison of the climate, landscape, and forest constituents of North America, Europe, and Asia, which will be of great value to planters of exotic trees, who too often plant whatever species are reputed "hardy" without knowing or considering their climatic and cultural requirements. From a dendrological point of view Dr. Mayr divides the Holarctic region into the following climatic regions:—

1. "Lauretum," or subtropical zone of the Evergreen Oaks, Arbutus, Box, Olive, Maritime Pine, Chamærops, &c.
2. "Castanetum," or warmer zone of deciduous trees, as Chestnut, Plane, Ash, Pinus Laricio, &c.
3. "Fagetum," or colder zone of deciduous trees and conifers such as Beech, Oak, Maple, Elm, Lime, Silver fir, &c.
4. "Pinetum or Laricetum" zone of conifers and hardwoods such as Birch, Alder, Willow, &c.
5. "Polaretum," or zone of the hardiest trees such as Spruce, Pinus montana, Cembra, and Larch.

But though these divisions may generally represent the facts of natural distribution, yet in the cultivation of exotic trees experience has shown us that they are no sure guide, and that trees from all these regions will flourish together in some parts of England, though they will, no doubt, only attain perfection in what Dr. Mayr calls their "optimum" of climate.

The third and fourth parts, on the acclimatization of exotic trees, are of the highest value and interest to all planters, as from them some very remarkable conclusions are drawn, namely, that the individual constitution of plants is of more importance than the origin of their parents, and that seeds taken from individuals growing wild under very different climatic conditions do not reproduce with any certainty the characters which they might be expected to inherit. These conclusions are worthy of the careful consideration of all institutions where biological research is carried on, for they seem to me to be opposed, to some extent, to the matured opinions of farmers and gardeners based upon experiments with cereals and vegetables. An opinion which is new to me, and requires further proof, at least in England, is that every tree in its "climatic optimum," that is, in the region where it attains greatest perfection, loves fresh soil; but towards its limit of growth as regards heat, requires fresher and damper soil, and towards its limit as regards cold, drier soil.

The fifth part relates to the importance of correct nomenclature and identification of introduced species, the want of which has proved a frequent source of error owing to imperfect knowledge, especially among nurserymen.

The seventh part, of nearly 300 pages, is a list of species which are, or may be, introduced into some part of Europe, and grown in the open air with a probability of success; and though, as far as it goes, this part is very reliable, and in cases where the author has seen the trees in their native lands, contains many details of great interest and value, yet it is insufficient in many cases to enable the reader to appreciate correctly the comparative value for economic or ornamental use of the trees mentioned. Some of the most valuable and ornamental timber trees, at least in the climate of Great Britain, such as Cedrus atlantica, Chamæcyparis nutkaënsis and Juglans nigra, receive but little notice, and others, such as the Elms, Poplars, and Limes, all genera of great variability and economic value, are dismissed in a few lines.

It would be impossible to criticise in a review the many points of interest in which Dr. Mayr's opinions on questions of nomenclature, &c., differ from those of others; it may suffice to say that he gives reasons for his views which prove that he has an open mind; though, as I think, he does not allow sufficient importance to variation, which is as great among trees as in any other plants. For instance, he describes as Ulmus laciniata an Elm which is, to my mind, after seeing it in its native forest in North Japan, nothing more than a variety of U. montana, which produces three-toothed points on the leaves, a character probably inconstant, which occasionally appears in cultivation, as I have noticed at Munich.

The eighth and ninth parts consist of general and special rules for the planting and treatment of exotic trees, and are possibly the most valuable parts of the whole book, because they bring together in a concise manner the author's wide experience; but there are many points in which these rules would not be generally applicable in England, because of the great difference of the climate.

The illustrations, of which there are no fewer than 258 in the text, besides 20 plates at the end of the volume, are mostly fair reproductions of photographs from various sources, and sketches by Dr. Mayr himself. A more liberally illustrated work I have never seen, having regard to its low cost, but I think the author would have been wiser not to attempt to illustrate the woods of various trees in colour, as, though very good as far as they go, these illustrations give but a very incomplete idea of the beauty, or variability in colour, grain and quality of many of them. A properly illustrated work on timbers is a book of the future, and will require a very much larger work than that under review to deal with it in a manner suitable to its economic and scientific importance. The figures of the wood of Liriodendron and Magnolia are so precisely similar that they might have been taken from the same block.

It is to be hoped that the work will soon be translated into English, as, unlike some recent works we have on trees, it is not a mere compilation, but the work of a man who, after having studied the science and practice of forestry in his own country, has travelled widely and seen with a trained eye the finest forests of the temperate region in Japan, North America, and the Himalayas. *H. J. Elwes, Colesborne, Cheltenham, March 17, 1906.*

CHRYSANTHEME ET DAHLIA, LEUR ENTREE EN EUROPE, EN FRANCE, et dans le département de l'Aube. By Charles Baltet. Troyes, Paul Nouel, 1906.

Although no longer a young man, M. Baltet is decidedly a most industrious one, and the interesting treatise by him which has just come to hand is only an additional proof out of many. It is curious that both the Chrysanthemum and the Dahlia should have been introduced into Europe in 1789, and that no horticultural author should have dealt with these two important autumn flowers jointly in a single volume. "Chrysanthème et Dahlia" is a well printed historical review of the two flowers, since their introduction more than a century since. It consists of over 70 pages of text, with illustrations in black and white, one of which—the old purple Chrysanthemum, the first known variety in Europe—is copied from pl. 327 in the *Botanical Magazine.* The author also gives a reproduction of the first Dahlia. So far as the Chrysanthemum is concerned, M. Baltet covers the whole scope of the historical field from Breynius to the most recent author. He relates briefly the triumphs of his many compatriots in the work of seedling production, not forgetting to pay tribute to the raisers and authors in other lands than his own. He records the work of the various National Chrysanthemum Societies, but deals very sparingly with the technicalities of culture.

In relation to the Dahlia his treatment is practically identical, and there is no doubt, to admirers of these two popular flowers, both in France and elsewhere, this new addition to French horticultural literature will be warmly welcomed. We notice M. Baltet's reference to Napoleon offering, in 1804, a silk tapestry hanging that had come from China to the Comtesse de Brienne, upon which were painted birds and flowers, among which it was thought that the artist had included the Dahlia. We have heard this story before, but, considering the Dahlia is a native of Mexico, are inclined to think that the flower in question is much more likely to have been a native attempt at depicting an incurving Chrysanthemum. To the inexperienced eye the similarity of form might easily prove deceptive. *C. H. P.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Deciduous Orchids.—Continuing my remarks on deciduous Orchids, the Calanthes of the vestita group, such as C. Veitchii, C. bella, C. Harrisi, C. Victoria Regina, C. Burfordiensis, C. Bryan, C. Wm. Murray, C. rubro-oculata, C. luteo-oculata, and many others of this section, must be repotted as soon as the young growths have commenced to grow, or immediately before new roots appear. The compost in which Calanthes should be potted ought to be more retentive of water than that used for the majority of Orchids; a compost of an open nature that will allow the roots to push themselves easily through, and at the same time such as will hold water without becoming sour and stagnant. Our plants have succeeded best in a compost consisting of three-parts good fibrous loam, the remainder being finely-chopped sphagnum-moss, small crocks, and coarse, clean silver sand, the whole being well mixed together. If a sufficient quantity of fibrous loam is not procurable some extra moss and a little peat may be added with advantage. The pots should be used in a clean and dry condition, and be about half-filled with clean, broken crocks, over which a thin layer of turfy loam or some rough moss should be placed. My practice has been first to remove the back pseudo-bulbs and then place the best bulbs singly into pots of a convenient size; for the larger and stronger plants pots five inches in diameter are most suitable. If a large number of flowers for cutting is desired, and the accommodation for growing the plants is limited, put several pseudo-bulbs in a pot, according to the size of both pots and pseudo-bulbs. After turning the plants out of their pots and removing the old soil, cut off the dead roots, leaving about half an inch attached to the bulb, which will help to steady it when planted in the new compost. In filling the pots the soil should be shaken down moderately firm to within one inch of the top, then the psendo-bulbs may be placed on the surface, adding more soil, so that the base of each plant is buried about half an inch deep. This will leave space for receiving water, and also for a top dressing of turfy loam when the plants have become thoroughly established. After potting, give these Calanthes the best position available either in the East Indian house, plant stove, Cucumber or Melon house. They will require no water for several weeks, merely damping between the pots occasionally until the growths and roots show signs of advancement: then by slightly sprinkling the surface of the soil the roots will soon obtain a hold on the sides of the pot, when the quantity of water should be gradually increased, but until each plant has filled its pot with roots the soil should not be kept in a wet condition. Careful watering when growth is only commencing is imperative. The back pseudo-bulbs that are taken off may be used for increasing the stock. Insert them thickly in small pots filled with sphagnum-moss and a little sand. When growth has commenced repot them as advised for the older examples. Until these Calanthes have become well rooted, and the growths are full of vigour, we shade them from all strong, direct sunshine, but afterwards they are exposed gradually as the season advances. In addition to the materials advised above for potting Calanthes some growers use leaf soil and well-dried cow manure with equally good results.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Codiæums (*Crotons*).—The successful propagation of these useful decorative plants can be better performed at the present time than at any other season of the year. At the re-commencement of the flow of sap they emit roots so much more quickly than when the tissues of the wood have become harder. Take off the cuttings with a little of the old wood attached, and immerse them in a tank of water for an hour or so, previous to inserting them in small pots in the propagating frame. This will destroy any red spider which may be secreted in the corrugated leaves, and from which it is most difficult to eradicate them by sponging; and the leaves themselves will absorb moisture that will keep them fresh for a few days without needing so much atmospheric moisture in the propagating box, which might cause damping either at the base of the cutting or the extremity of the leaves. When the cuttings have made roots, care is necessary in removing them from the cutting box in order to avoid causing a check to the plants. Therefore do not place the plants too near the roof ventilators, but let them occupy a lower stage until the young plants have become accustomed to a drier and less confined atmosphere, when they may be moved with advantage nearer to the roof glass in full sunshine. At Cleveley shading is scarcely used at all in the growing of Crotons. Only at this season of the year when there are sudden outbursts of sunshine, and the young leaves are especially tender and liable to become scalded is there any shading employed. Care in affording ventilation is of vital importance in order to prevent "spot," which is very common in the spring months, but is less frequent as the season advances. No animal manure of any kind is used at Cleveley in the soil or otherwise, but a little of Standen's manure is used according to the directions issued. The rooting medium is of good fibrous loam, from which the fine particles have been excluded; a 5-inch potful of bone meal to each bushel of compost, some fine crock siftings, and a liberal addition of sand. I do not advocate the use of large pots. Strict attention to watering is necessary. Let the soil which is to be used be warmed previously.

General Remarks.—Regulate the growths of Stephanotis, Dipladenias, Lapagerias, Clematis, etc., removing any weakly shoots to prevent overcrowding; by this early attention much labour will be saved later in the season. Acacias, Boronias, Epacris, Genistas, and other Cape and Australian hard-wooded plants which have ceased flowering should be cut back. Apply water most carefully till new growth has commenced, when repotting may be done. Maintain the atmosphere in the stove at a temperature of 68° to 70° at night, and 75° to 80° during the day, allowing it to rise at closing time to 90°. Lose no time in securing a stock of cuttings of Begonia Gloire de Lorraine.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Peaches and Nectarines.—The fruit on the trees in the earliest house will be now passing through the most critical time, that of "stoning." Maintain the atmospheric temperature as regular as possible, 55° at night, and 60° to 65° during the day, taking care not to exceed these figures by fire heat until the fruit has stoned. Syringe the trees twice each day, as green-fly will be sure to put in appearance, and must be got rid of, or it will cause the leaves to curl up and seriously check the growth of next season's bearing wood. The trees in the latest houses are now in bloom, and may be expected to supply fruits until fruits ripen on the trees cultivated out of doors. They should not be subjected to much heat, but be allowed to move slowly. Admit plenty of air on all occasions, and when the petals commence to fall, resume the syringing of the trees, and maintain considerable moisture in the atmosphere. Attention should be given about every third day to dis-budding, as was recommended for the earlier trees, carefully selecting the best and most prominent growths for supplying fruit next year.

Apricots require very careful management when grown under glass, for the trees cannot withstand much artificial heat, and especially during the early stages of growth. The delicious fruits of the Apricot are always appreciated for dessert, and also for the making of tarts. And to be successful in cultivating a supply indoors, the house, or wall case, should be made so that the lights can be taken off in winter, and be replaced when the trees come into blossom. Ample ventilation should be given both by day and night; just keeping out frost is all that they require. Pollinate the blooms daily, and keep the atmosphere of the house dry till the fruits have set, then syringe the trees over twice or three times a week to prevent red-spider. Begin to disbud the shoots early by removing fore-right growths, reserving some of the strongest and best placed shoots for forming bearing wood. When the fruits commence to swell after the stoning period has passed, weak liquid manure may be applied with advantage to the roots.

Seeds to be Sown.—It is always prudent to have young plants of Cucumbers and Melons in different stages of growth; also Tomatos, the seeds of which should be sown thinly, so that the young plants may be lifted out of the seed pot when ready, and be placed in 3-inch pots without receiving a check. Keep the seedlings up to the roof glass to prevent them from becoming weakly.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Asparagus Beds.—The making of new beds may now be proceeded with, and the plantations be made just when the young growth is about an inch high. This crop does not succeed well in all gardens. Asparagus requires thorough drainage, and a warm, rich soil, somewhat light in character. Trench the ground 3 feet deep, and incorporate with it a heavy dressing of decayed vegetable mould, the refuse of burnt rubbish, and farmyard manure. It will pay best to do this work thoroughly in order that the beds may last in good condition for a number of years. Where it is possible to procure plenty of sandy loam the top spit may profitably be used in addition to the other ingredients mentioned. I prefer growing the plants on the flat instead of in raised beds, unless the soil is usually very wet. The lines may be made at 3 feet apart, and the plants put at distances of 2 feet in the lines. This will admit of the cultivation of a light crop between the lines for the first two years. When planting the Asparagus, spread the roots out flat and cover them 3 inches deep. Two-year-old plants are the most suitable to use, and if seed is sown in nursery lines each year, and a few new beds also made yearly, plenty of good Asparagus should be forthcoming for the table. The seed should be sown early in April. Permanent beds of Asparagus should be finally trimmed over by applying a slight top-dressing with wood ashes and bone meal, but avoid the use of heavy coatings of dung at this season; rather give such a dressing after the crop has been cut, so that the plants may make strong growth before the season is past. The quality of the produce to be gathered in the following season will largely depend upon the character of this growth.

Runner Beans.—It is much too early to think of sowing this crop out of doors, but where protection can be given them in any cool structure just secure against frost a useful crop may be easily obtained. In cold districts where it is difficult to have Runner Beans before late in August, the value of this method of culture will be apparent. The plants can be grown in narrow boxes of any length to suit the house, cultivating the plants singly at 15 inches apart, and affording them stakes placed either perpendicular or at an angle. Admit plenty of air to the house when the plants are in flower and syringe them regularly. In addition to a good selection of the Runners, the climbing French varieties should be included.

Mushrooms.—There is still time to collect manure, and form Mushroom beds in the structure where they are grown for winter supply. At any later date it will be advisable to make beds out of doors, unless there is a cellar uninfluenced by hot weather that may be used for the purpose. More moisture will now be required when damping down the house, and the beds will need to be afforded water more frequently, otherwise the crop will become tough and dry. Use tepid water containing a little salt. It is an excellent plan to cover the beds with thick paper to conserve the moisture near the young Mushrooms.

Herbs.—Make a full sowing now out of doors in lines of all the varieties needed for the supply of the house, and when the plants are large enough to be transplanted, form an herb border, placing each variety in beds properly labelled. Unless this is done, mistakes will constantly happen and the wrong varieties be sent in to the house.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Grafting.—Stocks which were headed back as advised should first be examined to see if the bark will separate freely, and as soon as it does grafting may be at once commenced. If the weather is genial in the first and second weeks of April, it is the most suitable time. It may be said that most of the grafting is done for us in the nursery. So it is, and so it should be, for the preparation and growing of stocks require much time and space, but there are probably worthless trees of inferior varieties, and these may be transformed into profitable trees of good varieties by the process of grafting. For old stocks such as standards that have been headed back, "crown" grafting is best. The branches which are to receive the scions should be cut back to within 2 feet or 2 feet 6 inches of the main trunk. If the sap is found rising sufficiently, run a sharp knife around the inner edge of the cut, and then make a cut through the bark downwards 2 to 3 inches long.

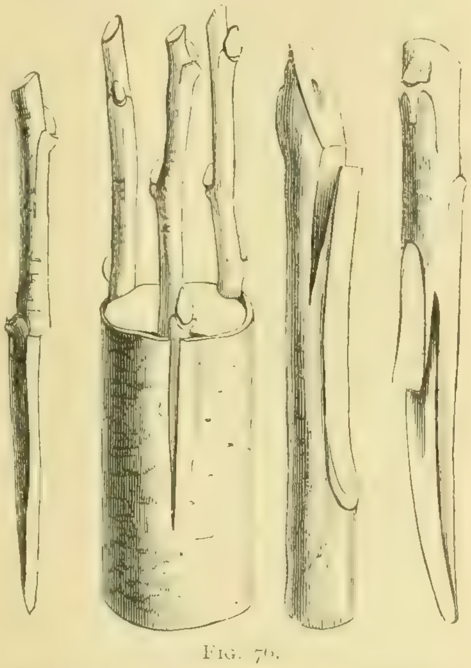

Fig. 76.

Crown or Rind Grafting. Cleft Grafting.

Afterwards take the scion, which should be about 5 to 7 inches in length, and cut it in an oblique manner and the same length as the cut in the stock, taking care that the two barks will unite. The union must be made as nearly perfect as possible—as a dovetailed joint in carpentry. As soon as the union is complete, wrap it in and tie with raffia or soft twine at once, and smear this over with the prepared clay. Two or three scions may be inserted in a large branch; but if a tree has three of these large branches, about six grafts will be ample.

Young Seedling Stocks should be grafted by the method known as "whip" or "cleft" grafting. This will be found better for smaller trees such as cordons, dwarf trees, and pyramids. Cut the stock evenly in an oblique manner, then take the scion and cut it in a similar manner and about 1½ to 2 inches in length. Next insert the knife and make a small tongue upwards about half an inch from the top. Then cut the stock in a manner to correspond with this. Take every care to make the two inner barks fit perfectly; if the desired angle can be made at one cut so much the better. As soon as the graft has been fixed, bind it up at once and make it airtight by the use of wax or clay. Take means to prevent the clay from cracking. Should there be dry weather, an occasional spraying will keep this right, but it is a detail which must not be overlooked. Apple and Pear trees are grafted in precisely the same manner.

All Pruning and Training should be finished by this date, and the blossoms will soon expand. Make a general examination of all the trees to see that nothing has been overlooked. Keep a look out in warm weather for American Blight, and if any be found destroy it by means of a brush and some powerful insecticide.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Annuals—The merits of plants coming under the category of annuals are now so widely recognised that in alluding to them it is unnecessary to extol their value or depict the loveliness of their varied colours and forms to recommend them, as these attributes are familiar to everyone. True, a few years ago it was not unusual to hear them disparaged because of the prevalent idea that they were "weedy" and "short-lived"; but, happily, this erroneous impression has been dispelled, and to-day there is no class of plant more popular or in greater favour. So high in esteem are they that in many gardens the bedding is entirely carried out with hardy and half-hardy annuals, and with most satisfactory results. They are eminently suitable for massing. Stocks, Phlox Drummondi, Petunias, Asters, Salpiglossis, Helichrysums, Scabious, Nemesias, Antirrhinum, and Marigold are a few half-hardy annuals which in their distinct colours are splendid for formal bedding purposes. Not only in masses are they delightful, but a mixed border composed entirely of annuals is most effective and charming. Amongst the best of the hardy annuals for this kind of border are Lavatera rosea splendens, Godetia, Larkspur, Linaria, Clarkia, Brachycome, Centaurea, Lupins, Coreopsis, Mignonette, Saponaria, Leptosiphon, Platystemon, Calandrinia, Erysimum, Phacelia, Kaulfussia, Silene, Viscaria, Nigella, Nemophila, Sweet Peas, Convolvulus, Tropæolum, &c. The cultivation of the hardy annual itself is of the simplest. Take the opportunity now, when the weather is fairly dry to make the ground firm by treading and breaking up the rough pieces of soil with the feet, and then pulverising by means of a rake. The portions for the different seeds and annual plants should then be marked out, care being taken not to make them too formal. With the aid of labels, every portion of ground should show the particular seed that it is intended to sow there, that no confusion of colours may occur. In sowing, the fine surface soil should be drawn back by the hands, the seeds sown thinly, the soil returned and equally distributed over the surface again by means of the hand. When the seedlings have appeared above the soil, great pains should be taken to thin them properly to allow every individual plant ample space to develop. This operation and cutting away seed pods later on, are the most important items of cultivation to ensure the plants having a continuous flowering season.

THE APIARY.

By Chloris.

Beginners in the Art of Bee-keeping.—A large number of people now have a little knowledge of bees, and many, no doubt, would like to commence keeping them this year. Their desire will be increased because they have seen in some of the daily newspapers that a bee-keeper has stated that he has netted £40 per annum from something less than thirty stocks. To such I would say, "Hasten slowly." That bee-keeper would not start with so many colonies, but probably with one, and, as his knowledge increased, he would add to his stocks, and thus build up a good business and apiary.

How to Start.—Having decided to begin, the difficulty is, "How to start"? Decide to keep one stock in the first place, and, if you are not a very good carpenter, purchase a ready-made hive from one of the many bee-appliance makers. This will cost anything from 8s. 6d. to £1, according to the amount one is prepared to spend on the hobby. Having received the hive, give it at least three coats of paint. Fit up the frames with foundation, as previously directed, and order a swarm of someone who can be relied on. Purchase a good smoker and make a bee veil in the following manner. Buy about a yard of coarse black netting 18 inches deep, sew the ends together, run a hem round the top, and in it a piece of elastic large enough to fit the crown of the hat tightly.

How not to do it.—Early last year a man, with more money than wit, determined, without any previous knowledge, to keep bees and poultry as a paying hobby. Without consulting anyone he sank a considerable sum of money in both. The whole turned out a miserable failure; in the autumn he sold the lot for a mere song, and has gone to Canada to make it pay (so he says).

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Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR APRIL.

TUESDAY,	April 3	Roy. Hort. Soc. Coms. meet. British Gard. Assoc. Coun. meet. Nat. Amateur Gard. Assoc. meet. Brighton Spring Flower Show (2 days).
WEDNESDAY,	April 4	Shropshire Hort. Soc. Show, Shrewsbury. Roy. Hort. Soc. of Ireland Show (2 days).
THURSDAY,	April 5	Linnean Soc. meet.
SATURDAY,	April 7	Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet. Dutch Gard. Soc. meet.
MONDAY,	April 9	United Hort. Ben. and Prov. Soc. Com. meet.
TUESDAY,	April 10	Devon Daffodil and Spring Fl. Show at Plymouth (2 days).
SATURDAY,	April 14	Ann. meet. Dutch Gard. Soc. at Richmond.
TUESDAY,	April 17	Roy. Hort. Soc. Coms. meet and Nat. Auricula & Primula Soc. Show combined.
WEDNESDAY,	April 18	Roy. Bot. Soc. Show Regent's Park.
FRIDAY,	April 20	Kent and Sussex Daf. and Spring Fl. Show at Tunbridge Wells.
WEDNESDAY,	April 25	Midland Daf. Soc. & Nat. Auricula & Primula Soc. combined Sh. Birmingham Botanic Gardens (2 days).
FRIDAY,	April 27	Roy. Bot. Soc. meet.
SATURDAY,	April 28	Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—46·2°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, March* 28 (6 P.M.): Max. 45°; Min. 33°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 29 (10 A.M.): Bar., 30.1; Temp., 46°; *Weather*—Bright sunshine.

PROVINCES.—*Wednesday, March* 28 (6 P.M.): Max. 46° Ireland S.W.; Min. 41° England S.E.

SALES.

MONDAY—

Herbaceous and Border Plants, Lilies, Roses, Azaleas, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY—

Lilies, Hardy Border Plants and Bulbs, Carnations, Pinks, Gladiolus, &c., at 12; Roses and Fruit Trees, at 1 and 3; Azaleas, Palms, &c., to follow, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

Sale of Roses, Palms, Lilies, &c., at Stevens' Rooms, King Street, Covent Garden, London.

FRIDAY—

Perennials and herbaceous plants, Lilies, Roses, Azaleas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris. at 12.

Imported and established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Warts on Vines.

These outgrowths from the under surface of Vine leaves are of very common occurrence. In the course of the year we get numerous specimens and are asked to supply the reason for their appearance and the remedy for the diseased condition. In most cases the outgrowths are due to a want of proper proportion between heat, moisture and ventilation. There has been a sufficiency of heat, light, and an abundance of moisture, but of fresh air there has been a deficiency. A plant requires fresh air as much as a human being does, and if the supplies are deficient the energies of the plant suffer likewise. These are truisms well known to, but not always adequately acted on, by the gardener.

Another cause of "warts" is the presence of mites which set up swelling of the tissues as a consequence of the irritation they cause. An atmosphere that is too dry and too hot would favour the development of these minute insects. Spraying with tobacco water or vaporisation with sulphur carried out with all due precaution is desirable in these cases, and specially desirable is the destruction by fire of the affected leaves.

But it is not of these wart-mites that we propose now to speak. Our present concern is with the warts due to a stuffy, stagnant, over humid atmosphere. These have been made the subject of special research by Miss Dale, who contributed a paper on the subject to the Philosophical Transactions of the Royal Society for 1905. The paper is mainly one for physiologists and chemists, but some of the author's conclusions will have special interest for gardeners, such, for instance, as the experimental proof that these warts ("intumescences" as they are technically called) do not develop on strong, healthy plants in the open air, but on plants grown in warm, damp, well-lighted greenhouses when intumescences are produced in varying number and degree. In a previous paper published in 1901 it was shown in the case of Hibiscus vitifolius that whilst moist air is essential to the production of these outgrowths, moist soil has no effect provided the "tops" are in dry air. In the present paper details are given of the artificial production of warts on the upper surface of Potato plants placed in a pot under a bell-jar in as strong a light as possible and in a temperature of about 85° F. Another plant by its side was placed under the same conditions but without the bell-glass. After 48 hours almost every leaf and stem of the covered plant was covered with a mass of pale green "intumescences," whilst there was none on the uncovered plant.

"If such a plant be removed from under the bell-jar to a drier atmosphere, as soon as the intumescences are formed they dry up, we are told, into black dead spots; or, in the case of large intumescences, actual holes appear in the leaves, though to a certain extent the rest of the plant recovers itself. If, on the other hand, the plant be left for some days longer under the bell-jar, the intumescences become disorganised by breaking down into a brownish watery mass, the leaves drop off, and ultimately the plant dies. It is noteworthy that after the fall of a leaf a large cushion of intumescences is formed on the leaf-scar, and bears a striking resemblance to wound-callus."

We must refer the reader to the original paper for further details on the minute anatomy of these structures. It is shown among other things that root-pressure and sap-currents have nothing whatever to do with the formation of these outgrowths which are purely local in their origin. The internal factors are irritability and active powers of assimilation; that is to say, the plant must be in a state of active growth, or there must be an abundance of stored food-material. The swelling is said to be due to the irritation caused by the formation of some substance probably oxalic acid. Carbohydrates, of which starch is one, give rise in the tissues to organic acids which decompose nitrates and tend to the formation of "proteids" or nitrogenous substances with a deposit of calcium oxalate. The oxalate may therefore be taken as an index of the changes in the nutritive processes included under "proteid metabolism." Very interesting, though at present scarcely of practical value, are the investigations on the division of the cell-nucleus, which in these cases is simple or "amitotic," and presents many points of resemblance to the changes observed in the nucleus in certain pathological growths in plants and animals independently of any parasitic organism. In "mitotic division" or "karyokinesis" the nucleus breaks up into an arrangement of peculiar threads called "chromosomes," too complicated and technical to be detailed here. It will be remembered, however, that in the vegetative cells the division of the cell-nucleus is simpler than that which occurs in the reproductive cells. This more complex arrangement, peculiar to the reproductive cells, occurs, as Farmer has pointed out, in certain tissues both in plants and animals, notably in Ferns in the tissues formed during apogamy (suppression of the egg-cell) and apospory (suppression of spores), and in cancerous growths in man. It is still a long way from warts on Vine leaves to cancerous growths, but the experiments to which we have alluded afford one more illustration of the fact that the researches of pure science, ignored by some as being, as they think, of no use, often eventually turn out to be of the very deepest practical significance.

OUR SUPPLEMENTARY ILLUSTRATION.—A notable feature at the meeting of the Royal Horticultural Society held on March 6 was a group consisting of four plants of Lissochilus Horsfallii. Each plant was stood in a tub of water after the manner in which Nymphæas in pots are cultivated, and they all appeared in the very best of health, showing that their environment had been in keeping with their requirements. They were from the gardens of the Right Hon. Lord ROTHSCHILD, Tring Park, Tring (gr. Mr. ARTHUR DYE), where this Orchid has been successfully cultivated for the first time probably since the date when Mr. HORSFALL, of Ballamour Hall, Staffordshire, grew and flowered the original type specimen. A figure of this original plant was given in the *Botanical Magazine*, t. 5,486, but the species was soon lost to cultivation. The spikes of 70 or more flowers are developed on tall, stout peduncles, and are surrounded by lanceolate leaves of a bright green colour. The sepals are upturned and recurved at their tips, and are tinged and lined with dark purple. The petals are orbicular in shape and are extended forward; they are white, and suffused with rose colour. The side lobes of the lip are erect, and bear purple markings on a green ground. The front lobe is of deep rose-purple, the base of the lip is white streaked with purple, while the callus is ivory white. The plants are treated as aquatics at Tring. When growing strongly frequent waterings of liquid manure are afforded, with the result that the specimens have formed bright green plicate leaves, and stand some five feet in height (branched in some instances), and bearing from 70 to 100 large flowers and buds on each inflorescence. When so cultivated this species has a very handsome appearance.

THE LATE COMTE DE KERCHOVE.—It fell to our lot last week to have to make known the sad, the overwhelming loss sustained by Belgian Horticulture by the death of Count KERCHOVE. It was well known to his intimates that the deceased gentleman was the subject of heart disease, and this circumstance may have given rise to the statement that he died suddenly. This, however, was not the case. He had been seriously ill for three weeks, and was so conscious of his approaching end that he was able to make known all his wishes. So desirous was he that his funeral should be of the simplest character, that he even desired that the public announcement of his decease should not be made until after his interment. But, in the case of such a man, such privacy could not be ensured, and a large gathering assembled at the grave-side on the 22nd inst., consisting of the vice-president of the Belgian Senate, many senators, members of the House of Representatives, and political associates, delegates from the province of Hainaut, of which he was formerly governor, deputations from the asylums and charitable institutions, in the management of which he took a leading part, to say nothing of his horticultural friends. At his expressed desire, no military honours were paid to the deceased, and no funeral orations were delivered, but nothing could prevent the popular manifestations of sorrow and respect in the shape of floral wreaths, which were extraordinarily numerous and beautiful. Sympathetic references were made in the Belgian Parliament, and the flags were hoisted at half-mast in many of the streets of Ghent to bear testimony to the incessant labours of the Count for the benefit of the working classes, the maintenance of the orphans, and the succour of the distressed. Only two days before his death he revised a biographical note drawn up by the "Avenir Horticole" (a society of young horticulturists), to accompany a portrait which was to be presented to the members of the Society on the occasion of the Count's accepting the honorary membership of the Society. "*Je vais vers la Verité et l'Egalité.*" were words uttered by him on his deathbed. We can add nothing to their significance. All that is left to us is to express, on the part of British horticulturists, our deepest sympathy with the Countess and her family in their bereavement, and our fellow-feeling with our Belgian friends in the momentous loss they have sustained.

Belgian Horticulture.—The magnitude of the losses sustained by Botany and Horticulture in Belgium of recent years is almost incalculable. The obituary records of Crepin, of Pynaert, of Rodigas, of Laurent, of Errera, and now of Kerchove, leave a sense of bewilderment. Who will preside at the next Quinquennial? Who will be the guiding spirit of that botanical congress which was adjourned from Vienna last year, to be resumed at Brussels in 1910? Errera was the chosen one—he died suddenly—Count de Kerchove succeeded, and now he is gone! *Qui vivra verra—serrons les rangs!*

Royal Horticultural Society.—The next meeting of the committees will be held on Tuesday, April 3, in the Society's hall, Vincent Square, Westminster. A lecture on "The Opening of Flowers," illustrated by lantern slides, will be given by Mrs. Scott at 3 o'clock. We would recommend our readers to make an effort to attend this lecture, which will be sure to interest them.

Linnean Society.—The next general meeting will be held on Thursday, April 5, 1906, at 8 p.m. Exhibition:—Mr. Clement Reid, F.R.S., F.L.S., "Some Plants new to the Preglacial Flora of Great Britain." Paper:—1, Mr. Spencer Moore, F.L.S., "A Second Contribution to the Flora of Africa." Rubiaceæ and Compositæ, Part II.; 2, Mr. E. J. Schwartz, F.L.S., "The Anatomy of the Stem and Leaf of Nuytsia floribunda"; 3, Mr. B. Hayata, "Taiwanites, a new genus of Coniferæ from the Island of Formosa." (Communicated by Dr. Maxwell T. Masters, F.R.S., F.L.S.)

Market Gardeners' Compensation Act.—The Bill which has been introduced by Colonel Long in the House of Commons "to remove certain doubts as to the meaning of the Market Gardeners' Compensation Act 1895" should be considered sufficiently non-contentious to be allowed to pass this session. It would enact that the fourth section of the statute referred to should apply, and be deemed always to have applied, to a case in which the tenant executed any of the improvements therein referred to under the conditions therein specified at any time within ten years before the commencement of the Agricultural Holdings Act of 1883, as well as to a case in which the tenant had, or should have, so executed any such improvement at any time after such commencement. The Market Gardeners' Compensation Act of 1895 was the first-fruit of Colonel Long's legislative achievement.

Small Holdings.—The Departmental Committee appointed by the President of the Board of Agriculture and Fisheries to enquire into the subject of Small Holdings, held a sitting on the 14th inst. Evidence was given by Mr. J. H. Sabin (Messrs. Smith, Gore & Co.), agents to the Ecclesiastical Commissioners, Little College Street, Westminster, S.W., and Mr. J. Nugent Harris, Secretary of the Agricultural Organisation Society Dacre House, Westminster, S.W. On the 21st inst. evidence was given by Mr. C. W. Tindall, F.S.I., Wainfleet, Lincolnshire, and the Rev. Richard E. Payne, Hedge End Vicarage, Hants.

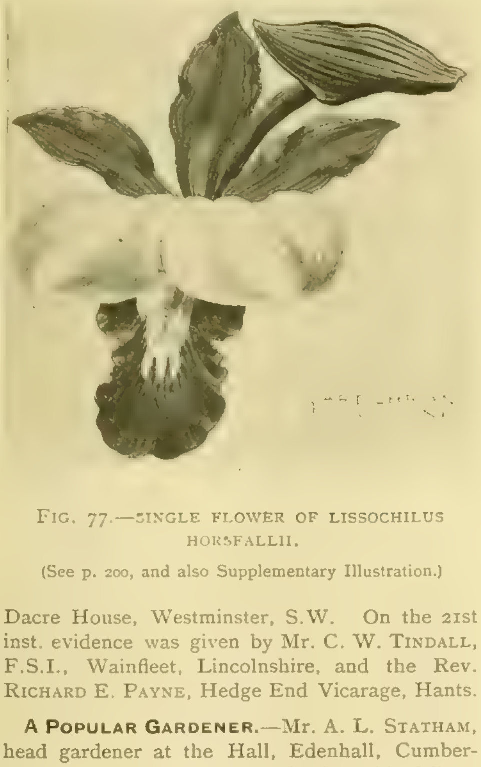


Fig. 77.—Single flower of Lissochilus Horsfallii.

(See p. 200, and also Supplementary Illustration.)

A Popular Gardener.—Mr. A. L. Statham, head gardener at the Hall, Edenhall, Cumberland, has received several gifts from his fellow-servants and various local societies on his leaving Edenhall to take up the duties of head gardener at Blaisdon Hall, Gloucestershire. Mr. Statham was mainly instrumental in inaugurating the Edenhall and Langwathby Flower Show about four years ago, and has since acted as its hon. secretary and treasurer. On Friday evening, at Edenhall, Mr. and Mrs. Statham were presented with a handsome silver coffee jug by the outdoor and indoor servants on the Edenhall estate. Mr. Statham was also the recipient of a handsome French clock, in marble case, and a purse of gold, subscribed for by the members of the Edenhall and Langwathby Floral Society and Football Club.

Kew in March.—We are not sure that it is quite congruous to put a "wild garden" in proximity to shaven lawns. Narcissi are lovely in the grass, no doubt, but they should be confined to the less dressed portions of the grounds. Now, for instance, that many of the earlier flowering kinds are past their best, there is an untidy look about the grass plots on the one side of the path which contrasts unfavourably with the neatness on the other side. This would not be noticeable away down in the pleasure grounds or arboretum; indeed, it would there be quite appropriate. How delightful it would be to come upon the Daffodils growing at their own sweet will! In the garden proper they should be kept to their beds.

The house known as No. 4 is visited at all times of the year in the certain assurance that something will be found to delight the eye and furnish suggestions to those who have to keep up a show house. But, after all, one does not go to Kew to see what can be seen in any ordinary garden or florist's shop, and, while we are captivated by the brilliancy of colour of old friends, we soon look about for plants of more interest. Just now, amid a wealth of beauty and colour, there are large plants of Impatiens Oliveri in bloom. These are not so generally attractive, it must be admitted, but to see a big bush of an Impatiens with large lilac flowers is what we could not see elsewhere. It shows how the managers of Kew, whilst "up to date" in the matter of American Carnations, to cite only one instance, are alive to the requirements of those who go to Kew to see something that they are not likely to meet with elsewhere. Among other plants, not forgetting the Orchids recently mentioned, there is Kalanchoe Dyeri, a handsome plant of which we hope shortly to give a figure; Cephaelis Manni, in the Victoria House, which will please the botanist and attract the attention even of the ordinary passer-by; Dischidia Rafflesiana, too, with its curious pitchers, is a plant which will arouse the attention of the plant-lover. Saxifraga apiculata and S. sancta, with their masses of colour, will appeal to those who love hardy plants and would not find it convenient to spend hundreds of pounds on an Orchid. But, if we once begin to catalogue the delights of Kew, there will be no end to our story. Suffice it to say there is something to suit all tastes.

Kew Bulletin.—Nos. 157-168 have lately reached us. Although dated 1900, there are indications that they were not printed till March 1906. They contain much useful and interesting information, including a cursory account of some of the Botanical Museums in France, in the course of which Mr. Hillier extols the Botanic Garden in the Park de la Tête d'Or at Lyons as the most beautiful garden that he visited. An article on "Madar" (Calotropis gigantea) will interest those concerned with economic botany, as it yields a substance which can be used as gutta percha, also fibre from the bark, and medicine from the root.

The Flora of France.—The illustrated Flora of France, by the Abbé Coste, has now reached to the Cyperaceæ, so that it is approaching completion. It is a valuable book for lovers of hardy plants, as each species is illustrated with a little figure, as in the illustrated edition of Bentham's British Flora. It may be had through Messrs. Williams and Norgate.

Lilium giganteum.—Mr. Spencer Whitehead obligingly sends us two small photographs representing plants of this Lily as grown by him last year at Esher. The tallest was 10 feet 3 inches, the others varied from 9 to 7 feet in height. Planted against a background of shrubs they must have been very effective. As similar specimens have frequently been published in our columns we do not deem it necessary to reproduce the photographs so kindly sent by our correspondent.

Royal National Tulip Society.—We are informed that the southern section of this society will hold their annual Show on Wednesday, May 23, 1906, in the Gardens of the Royal Botanic Society, Regent's Park, N.W.

Solanum Commersoni.—We understand that to a lady gardener, Mrs. Hancock, is due the credit of being the first to produce tubers of this species in quantity. This year the tubers have lost their bitter taste, and become edible, whilst so far they have proved immune to the injuries caused either by frost or by fungus.

Botanical Survey of the Empire.—The Kew Bulletin, No. 2, for 1905, which has lately reached us, contains a very interesting account of the genesis and the progress of the several Colonial Floras prepared at Kew. The scheme was initiated by the late Sir William Hooker, carried on by his successors, Sir Joseph Hooker and Sir William Thiselton Dyer. It will be remembered that the Floras of N.W. America, of New Zealand, Tasmania, Australia, British India, Mauritius, Hong Kong, the West Indies, Ceylon, South Africa, Tropical Africa, Bermuda, and St. Helena, have all been elaborated, the great majority entirely, others mostly, at Kew, besides similar recensions relating to China, Mexico, Central America, and other countries. In spite of delays and interruptions of publication, this constitutes a wonderful record. Canada, British Guiana, Trinidad, and Honduras, still await their "Floras," although, so far as Canada is concerned, much has been done independently by Professor Macoun.

A Bird-Cherry with Rose-Coloured Flowers.—In the Bulletin of the Imperial Botanic Garden of St. Petersburg, Vol. 6, No. 1 (1906), we find mention made of a Bird-Cherry (Prunus Padus) with rose-coloured flowers. This was found by Mr. P. Ssuzew in the Perm district of the Ural mountains. The author notes that trees of the same variety growing side by side flower at different times, so that early and late varieties may be distinguished. Mr. Ssuzew notes that the tendency to produce rose-coloured flowers in other species is seen to increase as the traveller goes eastward. It is to be hoped that the traveller succeeded in introducing this new variety to the St. Petersburg garden.

The Leo Grindon Flower Lovers' Association.—The movement had a simple beginning. At the close of 1904 Mrs. Grindon did some little work in Manchester in a quiet way, yet with results so encouraging that early in 1905 she mapped out a definite scheme—threefold in its nature—as an experiment, intending to follow whichever line seemed to promise best. First, to promote the growth of greenery in back yards; and to this endeavour she was led by the pleasant change she had effected in her own. During the twenty years of Mr. Leo Grindon's residence the bit of ground at the back of his house in Cecil Street had only been regarded as a back yard, or a "cat garden," and Mr. Grindon never set foot in it. But with his closing years and increasing feebleness there arose a great need of some place where he could sit out comfortably, without the fatigue of walking to the Park. Mrs. Grindon tells us she set to work, and very quickly and with little expense so transformed the despised back yard that it became a pleasant open-air lounge, and this encouraged her in the attempt to brighten the habitations of her neighbours. Many, says Mrs. Grindon, will say creepers will not grow here, and creepers will not grow there, simply because they have not tried them, or not tried in the right way. Let all sceptics wait till the early spring and then look out of the window on the staircase in the Onward Buildings, Deansgate, and there they will see in as small a back yard as could well be found a wall beautifully clothed with green, the plant rising, not from the ground, but from a window-box only. The wall faces north, and it gets very little sun either east or west, it is so shut in; and yet the creeper there flourishes—and, as one gentleman said, "furnishes a positive oasis in the desert of grimy brickwork." What one back yard can do in Deansgate, other back yards can do, and Mrs. Grindon finds very encouraging results from working amongst back yards. And to stimulate the work generally prizes are offered for the best creeper-covered wall within half a mile of the Exchange, and another prize for the best creeper-covered wall within one mile of the Exchange.

Russian Gardeners.—The Tsar has publicly thanked the officials of the Imperial Botanic Garden for their congratulations on his Majesty's fete-day (December 19). The receipt of this communication was celebrated by a *Te Deum* at the entrance of the hot houses, by enthusiastic cheers on the part of the employees, and by the singing of the national hymn by the pupils of the School of Horticulture.

The Journal of Agricultural Science.—The fourth part of the first volume of this publication contains papers on the following subjects:—Amount and Composition of Drainage through Unmanured and Uncropped Land, Barnfield, Rothamsted, by Dr. Miller; British Ticks, Edward Galton Wheler; Phosphoric Acid in Fertilizers, John K. S. Dixon; Production of Nitrites and Nitrates in Soil, E. J. Russell and N. Smith; Soils of the Ganges Valley, H. M. Leake, &c. The journal is issued from the University Press, Cambridge.

British Gardeners' Association.—At the last meeting of the Executive Council, Mr. R. H. Pearson in the chair, 35 new members were elected, bringing the total up to 870. The question of the registration of apprentices was favourably considered, but as the rules do not at present admit the entrance of gardeners under 20 years of age into the association, the matter will be submitted to the annual general meeting, to be held on May 30. Arrangements are being made to hold a meeting of the association at Altrincham, and gardeners interested are requested to communicate with the Branch Secretary, Mr. W. H. Jenkins, Wythenshawe Hall Gardens, Northenden. The conditions under which gardeners are employed under the London County Council were referred to, but no action was taken pending the receipt of fuller information on the subject. A special form has now been prepared for members requiring situations, and such can be obtained from the Secretary, Talbot Villa, Isleworth, W.

The Culture of Vegetables and Flowers.—Messrs. Sutton & Sons, Reading, have issued the twelfth edition of their useful book on "The Culture of Vegetables and Flowers from Seeds and Roots." This is a valuable guide both for professionals and amateurs, its concise, well-expressed directions being perfectly trustworthy. The publishers are Messrs. Simpkin, Marshall, Hamilton, Kent & Co., London.

Where to Live Round London.—An attempt, by the Homeland Association, 22, Bride Lane, Fleet Street, E.C., to answer the momentous question, "Where to Live?" It deals with the southern and western suburbs of the metropolis, and is evidently written by those who know the districts ranging (alphabetically) from Acton to High Wycombe. The advantages of each place are brought forward, and the several illustrations are all of picturesque localities. The editor is Mr. Prescott Row, and Mr. W. H. Shrubsole contributes a most important chapter on the geology of the district. Useful railway maps are appended, and also a geological map printed in colours.

Hybrid Hippeastrum.—Dr. Bonavia writes: "The enclosed Hippeastrum is the result of a cross between a show Hippeastrum (seed-bearer) and H. pardinum (pollen bearer). It has a number of the characters of H. pardinum; but the colour is a fine crimson-maroon, and quite different from that of its father. The profuse spotting on the petals, both on the front and back, is quite a distinct feature. I think something interesting might be made out of crossing the show Hippeastrums with H. pardinum in skilled hands. This is the only cross that I have succeeded in effecting. All the other crosses between Amaryllids of different genera and the Show Hippeastrums have produced nothing but Hippeastrums so far, without a trace of this pollen parent."

Rubber Cultivation in Ceylon.—Mr. Henry M. Alleyn has published a useful pamphlet on the Prospects of Rubber Cultivation in Ceylon, in which he speaks of the increasing importance of the industry. Any readers interested in this subject and desirous of information concerning it are invited to communicate with Mr Alleyn at Meeria Cottage, Maskeliya, Ceylon. His experience will be found of much use to them.

Dorchester and its Surroundings.—This is Vol. 46 of the now well-known *Homeland Handbooks* published by the Homeland Association, 22, Bride Lane, Fleet Street. It is written by Messrs. F. R. and Sidney Heath, with a "foreword" by Thomas Hardy, and a chapter upon the country walks round Dorchester by Henry J. Moule. Full justice is done to the interesting locality, and many illustrations are included, as well as a map. The letterpress is certainly more readable than that of an ordinary provincial guide-book. Very little is made of the botany of Dorset, the antiquarian and literary associations being more fully considered than the natural history.

Paris Market Gardeners on Strike.—The *Daily Telegraph* reports some very disorderly proceedings in the neighbourhood of Paris, where the strikers overturned the wagons going to market, and came into collision with the gendarmes. It appears the men stipulate for a day of ten and a half hours, instead of eighteen! They are willing to work at the same wages, viz.: 60 centimes an hour = 6d., but require 90 centimes per hour for overtime, together with a rest on Sunday and various other concessions.

Country In Town.—We understand that a meeting at the Warden's Lodge, Toynbee Hall, Whitechapel, was held on Monday, March 26th, to further the progress of the most laudable attempt to brighten the lives and stimulate the intelligence of our fellow workers at the East End as mentioned in a previous issue. It is hoped that some of our nurserymen may be induced to contribute to the beauty and interest of the exhibition. As nearly a million people have visited the Whitechapel Galleries, the floral exhibitions would probably not be unremunerative, even in a commercial point of view. Mr. J. C. Medd will act as chairman of the executive, and Lord Carrington as president. Correspondence should be addressed to the Curator, Stepney Museum, 77, High Street, Whitechapel.

The Shrewsbury Show.—We have received a copy of the schedule of prizes to be offered at the exhibition to be held on August 22 and 23 next, and it may be described as of the same liberal character as heretofore. A sum of £1,100 is offered in prizes, in addition to a silver challenge vase for Grapes (value 50 guineas), silver cups, gold and silver medals, &c. A cursory glance at the competitive classes that are published does not reveal any new feature of great importance, but in the plant classes and those for cut flowers the competitions will be more or less similar to those which have been held for some years past. In both sections the classes are very comprehensive. In the fruit section the dessert table competition is to be continued, also the champion Grape class, and those classes for large and small collections of fruit. That Greek will meet Greek in all the sections at this great show, as in years past, there can be no doubt, but such a wealth of classes and prizes should attract new competitors to enter the field. There is ample room and the most liberal encouragement to be found at any exhibition in the kingdom, whilst every section of horticulture finds rich encouragement at the great Shropshire exhibition. It is more than ever evident that Shrewsbury is to be the Mecca towards which the steps of all vegetable exhibitors will be turned in August next. Literally the vegetable department becomes there an exhibition of itself, and it will be a fitting compliment to pay to the home of the great evolutionist DARWIN, that a singularly practical and effective display of the effects of evolution on edible vegetable production should be made in the Quarry grounds next August. The total sum offered as prizes for vegetables there reaches to some £180, of which nearly £150 are devoted to open classes, other than traders, and about £30 to cottagers only.

BRITISH FORESTRY.—At the Carpenters' Hall, on the 22nd inst., Sir HERBERT MAXWELL delivered a lecture on "The Neglected Resources of our British Woodlands." Lord LECONFIELD presided. Sir HERBERT MAXWELL said it was generally recognised that the resources of our woodlands had been sorely neglected in the past from a variety of reasons, but that they were capable of development—slow development, he feared—if once they could be put upon a sound system of management. The economic importance, and the increasing urgency of the question, in view of the rapid diminution in the world's visible timber supply, and the simultaneous increase in the consumption, had occupied the attention of the Governments of the chief countries in Europe. So long as Germany could obtain timber abroad at reasonable prices her people were sparing their own forests, well knowing that in the future the price of timber must be enormously increased. In view of these conditions, what were we doing in Great Britain and Ireland to meet the coming scarcity? He was sorry to say that we had not yet gone beyond the stage of inquiry. One of the most common objections raised against forestry enterprise in the United Kingdom was that the climatic conditions were unfavourable. Nothing could be more groundless than the suggestion that British climate and soil were inferior to those of foreign countries for forest growth. Foreign experts were unanimous in their approval and envy of our circumstances in those respects. In Germany the State forests returned substantial profits, and he asked why British forests should not do the same under similarly good management. He outlined a scheme for British forestry under Government direction, and, referring to the 3,000,000 acres of our woodlands, he said that nine-tenths of them were in private hands, and, so far from returning a profit, they were a source of annual expense. If these 3,000,000 acres were rendered as productive as German forests, they would yield an annual profit of £1,000,000 a year. The lecture was illustrated by lantern photographs of British and Continental forests. During the evening it was announced that the Carpenters' Company's prizes of £20 and £10 for the best and second best essay on the treatment of woods and plantations from the age of 20 years to maturity had been awarded to Mr. LESLIE WOOD and Mr. MAW respectively.

Publications Received.—Annual Administration Report of the Forest Department of the Madras Presidency 1904-1905 contains full details of the State forests, their management, financial condition and administration.—*Annual Report of the Secretary for Agriculture, Nova Scotia.* For the year 1905 Mr. Chipman records a season favourable for the agriculturist. The spring was cold, but in June growth was rapid; and, finally, all the principal crops yielded a full average in quantity, and values have been higher than for many years. Consequently the returns are most encouraging, and farmers are looking forward with hope and confidence.—Imperial Department of Agriculture for the West Indies. *Manurial Experiments with Sugar-cane in the Leeward Islands*, 1904-5. Sir D. Morris here publishes in brief results given in detail in his fuller Report on the same topic.—*The Transvaal Agricultural Journal*, January. A quarterly publication dealing with all branches of the subject, including forestry and botany. There are an abundance of pictures from photographs, and a coloured plate of Smuts common in cereals.—*Journal of the Board of Agriculture*, March. Among the contents are: Thistles, by John Percival; Red Clover Seed and its impurities, by D. Finlayson; Larch Disease, Sprouting Seed Potatos, &c.—*Vegetables*, by Horace Wright. A second edition of a handy pamphlet published by the London Agricultural and Horticultural Association, Ltd., 92, Long Acre. It contains illustrations, and is certainly cheap for a penny.—Michigan State Agricultural College Experiment Station. Division of Entomology. *Insects in the Garden*, by Rufus H. Pettit.—*Jahres Bericht der Bayerischen Gartenbau-Gesellschaft*, 1905. The yearly report of the Bavarian Horticultural Society reaches us from Munich. It reports a satisfactory season, and contains several illustrations.—Central Experimental Farm, Ottawa, Canada: *Results Obtained in 1905 from Trial Plots of Grain, Fodder Corn, Field Roots and Potatos*, by Dr. William Saunders and Dr. Chas. E. Saunders.

KEW NOTES.

ERIOSTEMONS.

FEW Australian hard-wooded plants are easier to grow than Eriostemons. In spring they are very useful for the decoration of the cool greenhouse. If required in flower a month or six weeks earlier they readily respond to the influence of a little heat. For ordinary purposes an atmosphere having a minimum temperature at night of 40° F. will be sufficient. In sheltered positions in Devonshire and Cornwall one or two species thrive outside.

The stronger-growing kinds are readily propagated by cuttings, and the weaker ones by grafting on to Correa alba. They thrive in a compost of fibrous loam, peat, and sand. After flowering little pruning is necessary beyond shortening any strong shoots likely to spoil the shape of the plant. During July and August the robust kinds can be placed outside to ripen the growths. Plants grown in this way seldom fail to flower abundantly.

Although the genus contains some 25 species, very few are in cultivation. E. affinis is a densely-branched species, with starry, white flowers; E. buxifolius, as the name indicates, has small box-tree-like leaves, and the flowers are white, tinged with pink. E. linearifolius is a bushy plant, with small linear-obtuse leaves and pinky-white flowers. E. myoporoides is the best-known and strongest-growing species of the genus in cultivation. Several plants are flowering in No. 4. The largest planted out in one of the beds is 5 feet in height, and nearly as much through. It is a mass of flowers. When opening they are tinged with pink, changing to white. Produced on short racemes three to five together in the axils of the leaves, which are shorter than the leaves. E. cuspidatus and E. neriifolius are forms of this species.

E. intermedius is a supposed hybrid between E. myoporoides and E. buxifolius, but it is too much like the first-named parent to be of value.

E. pulchellus is another garden hybrid. A rather weak grower, the leaves are of small size, dark green in colour, and the flowers are white tinged with pink. *A. O.*

EDWARDS'S SAFETY CYANIDING MACHINE.

THE use of hydrocyanic acid gas as a fumigant entails danger to the careless operator, but the machine shown in Figs. 78 and 79 is intended to minimise the possibility of accident by enabling the operator to lower the cyanide into the bowl containing the sulphuric acid whilst he is outside the house and the door locked.

The machine is suspended to the roof of the plant-house by the hook (1) (Fig. 78) attached to the side bars at (2). The requisite quantity of water and acid is next put into the bowl at (3), remembering always that the water should be placed in the receptacle before the acid. The scoop (4) is held in position by means of the lever (5) to which a string is attached leading to the outside of the house. Place the cyanide salt into the scoop (4), leave the house and lock the door. The string may be placed either through the keyhole, over or under the door, or through a side ventilator. Pull the string about four inches to release the lever (5), when the cyanide will fall into the acid and the gas be immediately evolved.

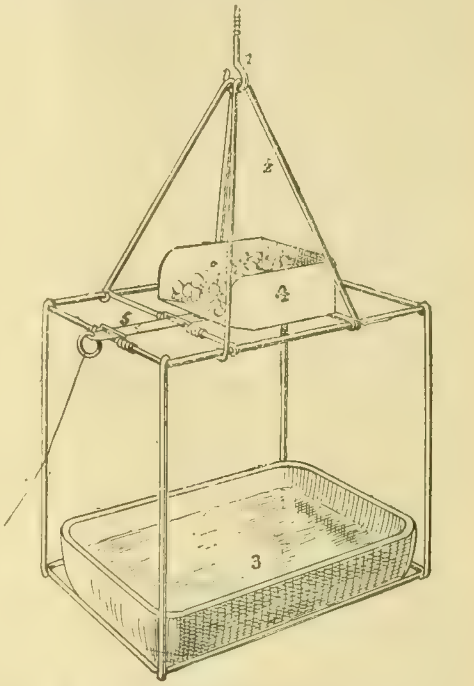


FIG. 78.—A SAFETY CYANIDING MACHINE, THE CYANIDE PAN BEING CHARGED READY FOR RELEASING BY MEANS OF THE STRING ATTACHED TO THE LEVER, THE OPERATOR BEING OUTSIDE.

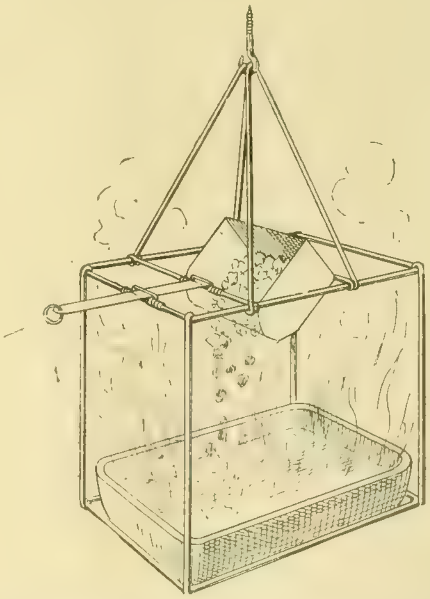


FIG. 79.—SHOWING METHOD OF RELEASING THE CYANIDE SALT INTO THE ACID IN THE PAN BENEATH, WHEN THE OPERATOR IS OUTSIDE THE BUILDING.

We are indebted to Mr. F. C. Edwards, nurseryman, 12-15, Warehouse Hill, Leeds, the inventor of the machine, for the opportunity of illustrating the same. Mr. Edwards informs us that he has applied for a patent under the name of Edwards's Safety Cyaniding Machine.

MARKET GARDENING.

TOMATO PROSPECTS FOR 1906.

FAR larger crops of Tomatos are being prepared for by trade growers than were seen in 1905. With the price of Tomatos now averaging about 3d. per lb., and, while freely admitting good culture is a necessity if best results are to be attained, yet Tomatos afford more scope for rough-and-ready culture than do many other crops.

Grape growing has been dropped by several growers. Some say on account of the Vines being worn out—for the moment I will let this pass—but it is a fact that in 1905, and also in the present early months of the year, large breadths of Vines were, and are, being destroyed, and Tomatos are undoubtedly taking their place.

With the present arrangement for the distribution of the fruit it will require a still wider field to profitably dispose of the enormous quantities that are likely to be cut this season. How this will affect the price per lb. will be seen later, but I cannot see a possibility of last year's figures being maintained.

I am not losing sight of the increased popularity of the Tomato, nor of the possibility of improvement in trade generally, but I believe returns will be lower for the coming season.

What to do with our glass is ever the question.

Last season, and I understand again this, some growers are content to grow one crop for the season, while others prefer planting twice, some with a first crop of Cucumbers.

There is no disguising the fact that we are likely to have an excessive supply of Tomatos, with the natural result that low prices will obtain. The larger firms are in many instances greatly reducing their labour bill, but with the smaller growers it will be a far tighter pinch and struggle and should the main crop of Tomatos be cheap, then it will indeed be bad for them. *Stephen Castle.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

CROSS FERTILISATION.—In your report of the Horticultural Club meeting held upon March 20, I read with interest that Mr. N. C. Cookson made reference to the impossibility of crossing small upon large flowers, as Sophronites grandiflora upon Brassavola Digbyana, owing to the grains of pollen from the smaller flower not producing tubes sufficiently long to effect fertilisation. The Primulaceæ afford a good example in support of his remarks, for in this Order there are long and short pistils upon different plants (Dimorphism), and, according to Darwin, the placing of pollen from the short upon the long pistil, or *vice versa*, will be ineffective. In my experience in fertilising Primula obconica, I have found this to be so, and have been most successful in obtaining seed upon that plan. I think that failures perhaps may be due to several causes. It may be that the pollen tube ruptures the conducting tissues of the style by being too large, whence no doubt decay of that organ would set in. *M. E. Mills, The Gardens, Coombe House, Croydon.*

NATURAL SELECTION. — With reference to Prof. Henslow's article in your issue of January 13, may I be permitted to point out two assertions which I challenged in the R.H.S. Journal, Vol. xxviii., parts 3 and 4, p. 426, with reference to the same assertions which appeared in the previous volume, and which are now repeated as follows:—(1). "That variations of structure among seedlings have been a source of injury, detriment, and destruction to them, has never been exemplified. (2) Specific characters are not, as a rule, developed in the extremely young state when thousands of them (i.e., the seedlings) perish." I wrote on the basis of my own experience, now of some duration, and since the object of every true scientist is to arrive at the truth through facts available for its determination, even though they may upset preconceived theories or ideas, it is, to say the least of it, unscientific to persist in unfounded statements, whose lack of basis is open to investigation. I therefore challenge Professor Henslow to disprove my assertion that, given a pan of variable seedling plants, such variations as involve smaller size and smaller area of foliage surface are injurious, detrimental, and destructive when they occur associated with other variations in the same species, but of opposite kind, the result being that the robuster variants overgrow and eventually starve out the smaller by depriving them of root-room and light. This fact, for a fact it is, is exemplified in my pans of seedling Ferns practically every season, and if dwarfed variants present themselves they can only be saved by extracting them or cutting out their robuster relatives. This being so, the exemplification which Professor Henslow declares has never existed is proved, on the contrary, it exists, not as a rare occurrence, but as a common phenomenon, and I am perfectly certain that many raisers of variable Phanerogams would confirm my statement respecting Ferns, which differ in no way from them in this respect. The second point is equally demonstrable as fallacious. The specific characters are, as a rule, present in the infant stage. In Ferns, at any rate, the primary fronds emerging from the prothallus are easily determined as regards the species, and with Phanerogams, if the cotyledons do not clearly betray the species, I am sure the first leaves do so. Any advantage which one species may possess over another, or which one variant of it may acquire over the normal by sporting, protects it from the insects if it tends to robuster growth. I say nothing of constitutional variation, though it is none the less a factor to be considered. Though my main object is to emphasise the fallacy of the above-repeated assertions in the hope that if I fail to convert Prof. Henslow I may at least put on record the actual facts in opposition to his definite assertions, I should like to add a word or two on the concluding paragraph of his article, viz.: "Thus natural selection has nothing whatever to do with the origin of species." Here, as ever, he ignores the natural sports, which in their wide structural departure from the normals and their constant reproductive capacity, possess all the attributes of new species. As these vary in all directions (another point challenged by Prof. Henslow), not only in structure, but in vigour of constitution, it is quite conceivable that now and again a new species may originate in this way, natural selection coming in as a factor, and causing it to spread and oust the parental form, owing to some special advantage in the struggle for existence with which its beneficial variation has endowed it. Until Prof. Henslow can disprove this possibility, it is a pity to dogmatise as above. *Chas. T. Druery, V.M.H., F.L.S.*

SCILLA BIFOLIA "PINKERTON."—It is known to a few that the late Mr. James Allen raised a number of seedling varieties of Scilla bifolia, and that among them are several pink forms, superior in every way to the old Scilla bifolia rubra, now getting very scarce, and for which S. b. carnea is sometimes sold. Mr. Allen was much interested in these pink varieties, and, as they seeded better with him in his garden at Shepton Mallet than in most places, he raised some good varieties. One of these, at present in bloom here, he called Pinkerton; the small offset Mr. Allen sent me in 1901 has made a little increase, and I have now three or four plants in bloom. It resembles Pink Beauty, another of Mr. Allen's varieties, but is of a better colour. The flowers are of good size, larger than the greater number of the forms of S. bifolia. *S. Arnott, Sunnymead, Dumfries.*

FLOWERING OF CŒLOGYNE.—In answer to Mr. F. Chittenden's enquiry on p. 172, respecting the flowering of C. cristata, I remember when I was foreman to Mr. M'Intyre, Glen Gardens, Innerleithen, that he showed a large basket of C. cristata (Chatsworth variety) at the April show in Edinburgh, which gained the first prize for one Orchid in bloom. When the plant was brought home it was given the usual top-dressing of peat and sphagnum-moss and was placed in the Cattleya house to make its growth. In July, flower-spikes began to appear at the apex of the pseudo-bulbs, and by the beginning of September it developed 60 spikes of well-finished flowers. The plant was taken to the September show in Edinburgh and again won first prize for one Orchid in bloom. I remember Mr. M'Intyre speaking to several Orchid specialists, among them the late Mr. Wm. Thomson, Junr., of Clovenford. The only reason they could give for the second flowering was that the plant was in unusually good health and condition, and they all thought it would be detrimental to the future well-being of the plant. It was put back into the Cattleya house to complete the growths it had been making from the base. Splendid pseudo-bulbs were made, and, after resting, the plant began to show flower-spikes as usual, and so profusely did it bloom that it was taken once more into the Edinburgh April show and was again awarded first prize for one Orchid, thus gaining the unique position of having won three first prizes in one year. *Geo. Haig, Garvald House Gardens, Dolphinton.*

THE HAWFINCH. — The hawfinch (Coccothraustes vulgaris) is not an alien from Germany, although it is found on various parts of the Continent, but it is also to be found in most parts of the British Isles all the year, though there are fewer in the extreme north of England and Scotland. Owing to its shy and retiring habits, the hawfinch is thought to be rare, but this is not so. It is perhaps most common in Norfolk, Suffolk, and Essex, but here in Hertfordshire it may be seen at any time of the year, and in the breeding season I generally find a nest or two; the young are usually hatched in May. Their fondness for Peas is known to most gardeners, and a bird with a family of four or five young ones will soon destroy a few rows. The hawfinch (the largest of British finches), like most other finches, has greatly increased in numbers since the passing of the Wild Birds Protection Act. *F. G. Gerrish.*

PROTECTION OF SEEDS AND SEEDLINGS FROM THE RAVAGES OF BIRDS.—There are few gardeners who have not to complain of the loss of seeds and young plants, Pea pods, etc., from small birds, especially if woods, dense shrubberies, and copses are contiguous to the garden. The worst offenders are finches, especially the hawfinch, sparrows, and the crossbill. Bird scarers, such as wind clappers and guys, are of no avail, and the birds being abroad by sunrise—that is, before the "boy" arrives at 6 a.m., they have the garden to themselves from which to pick and choose their early meal. For the gardener to put netting over every seed bed or patch, or rows of Peas in bearing, is obviously a great bother, and in some cases an impossibility. A more economical and easily improvised method is to buy reels or balls of thin, black cotton thread, and with a simple implement called a threader, or distributor, fasten crossing lines of the thread, supporting them by means of Y-shaped pegs of wood. This may be rapidly carried out, and forms a very effectual scare to the birds, who are very suspicious of being touched by that which they do not readily detect by sight. With rows of Peas in bearing, it is, if threaded along the rows, attaching it to the Pea-sticks, equally effective, and does not interfere with the gathering of the crop. Young Peas, transplanted from the seed boxes, etc., or just coming through the soil, are easily protected with two or three zigzag lines of thread made taut, and hung on pegs. *F. M.*

IRIS VERNA.—The unpropitious weather during the last fortnight, when we had hail, rain, snow and frost, has not deterred this lovely Iris from flowering. Not at all fastidious as to position and soil, from the dry wind-swept bank to the margin of the cold stream, its large, dark violet-blue coloured flowers appear freely, contrasting, or I should say harmonising, with the patches of mild Primroses hard by. A strong violet scent is emitted from its flowers. The foliage is of very neat dwarf habit, and of glaucous, grass-like appearance. This species may also be grown well in pots or on the rockery. *W. H. Clarke, Aston Rowant, Oxon.*

THE COLONIAL FRUIT SHOW. — Another Colonial fruit show has come and gone, and although a great improvement on its predecessors, there is much that our Colonial friends have to learn if they want their trade to develop as I should like to see it develop, and in making the following remarks I hope they will be taken in the spirit in which they are offered. The Royal Horticultural Society have certainly done all they can well be expected to do in giving them the hall, advertising the show in their schedules, entrance cards, and so forth, but the two excellent judges were certainly lavish in their awards, so much so that their decision was severely criticised by more than one member in the home trade. The weak point of the whole show, in my opinion, was the want of better staging. Nearly all the exhibits were put down, as the saying is, anyhow, more as though they were on costermongers' barrows than at an exhibition of such importance. They should take a lesson from the exhibit of the King's Acre Nursery Co., or of Messrs. Rivers and Son, then the fruit would look much more attractive. The display of fruit in itself was all right, but half the quantity, better staged, would have been better, for the only exhibit that was worth the award that was given it was the collection got together by the Army and Navy Stores, and which consisted of fruits not only from the Cape, but from Jamaica, Nova Scotia, Canada, and other places. The reception that was given the night before the show was all very well in its way, and it may be well to get that class of gentlemen interested in the exhibits, but it would have done much more good if the following evening the members of the trade or the large wholesale fruit-merchants from the different parts of the country had been invited in a similar way, for they are the ones who can make or spoil the trade in the future I would suggest to our Colonial friends that, if they get such a lot of fruit sent over in the future, it would be much better if it were all brought up into the hall and put upon a table for those who would like to taste rather than to leave so much in the cellar unseen, as they did this time. Having visited Africa, and having seen the possibilities of these various fruit farms, I should be delighted to do anything I could for the future success of an undertaking of this kind, and I do not think I could give better proof of this than when I say for several weeks past I have had from six to ten boxes of fruit a week at my own expense, sending samples free of charge to various customers in different parts of the country. The wine was a most delightful exhibit, and I do hope it will be the stepping stone to introducing the Cape wine to this country in a very large way, for I am quite sure if the English prejudice could once be overcome, the Cape wine would prove in every way superior to that which we can get from the European Continent. Tobacco was a most interesting exhibit, but I fear although the quality was good the English public will be somewhat prejudiced against their system of packing, for I have often heard prejudice is everything; in fact, some people say that smoking English cigars in England and smoking English cigars abroad is like smoking two different things; just as Englishmen say they can smoke Dutch cigars in Holland, but when they bring similar ones over to England, they do not seem to relish them at all. A word to Jamaica: How can Jamaica expect to make an impression upon the English public if she cannot put up a better exhibit than she did at the last show? The stand was poor and dirty, the fruit was flung together in a manner worse than would be seen on an ordinary costermonger's barrow in the East End of London. *Robert Sydenham, Tenby Street, Birmingham.*

THREE-SPORED RUSTS.—An addition must be made to my communication on this subject (see *Gardeners' Chronicle*, December 17, 1904, p. 418), inasmuch as another species has been described as producing "amphispores." In the *Bulletin de la Société Mycologique de France*, vol. xxii., fasc. 1, p. 72, M. Maublanc has described Puccinia la Testui on leaves of Vernonia, from East Africa, with bicellular Puccinia spores (Fig. 3), and unicellular spores, resembling uromyces (Fig. 4), which he denominates "mesospores." It is rather a pity that the two names of "amphispore" and "mesospore" should be applied to the same organ, although "amphispore" has priority. At any rate this is an additional species in which "amphispores" have been discovered. *M. C. C.*

PACKING SEEDS FOR THE TROPICS.—In connection with the discussion in these columns, the following extract is from a communication received by us last mail from one of our customers in India, who buys several hundred pounds worth of seeds every year:—"The seeds of all the varieties you sent, both vegetable and flower, germinated wonderfully, *and this was chiefly attributed to the fact of your having put the seeds in tinfoil inner pockets.* Please always do this, as it is a great protection against damp. I am obliged to open seeds here very early, that is in September sometimes, when we are still subject to rain, and the consequence is, that seeds that are not well protected become useless. Owing to this I lost last season fully £30 worth, if not more." *James Carter & Co.*

MISTLETO.—It is, I believe, a rare occurrence to find Mistleto growing on a Quercus pedunculata, or sessiliflora, only a few authentic specimens being known in this country. Probably it is more curious still to see it growing on a specimen of Q. rubra, the Red American Oak, when we consider the comparatively few specimens of this tree compared to the numbers of our own indigenous Oak. I think, therefore, botanists may be interested to hear that in the arboretum at Arley Castle, Worcestershire, there is a bunch of Mistleto growing on a branch of a Q. rubra. The tree in question was planted by Lord Mountmorres about the year 1820, at which time he made a large collection of American and other foreign trees. Among other trees which were planted by him, and which now have Mistleto growing on them, I may mention the red Maple, Acer rubrum, and the black Walnut, Juglans nigra. *Robert Woodward, jun., Arley Castle.*

DENDROBIUM WARDIANUM.—Having noticed one or two notes on D. Wardianum in recent issues of the *Gardeners' Chronicle*, I send you a flowering growth taken from one of the plants here. These plants have been here some years, but they have never flowered like this before. The growth I send has 31 flowers. I have also enclosed one or two flowers cut from other growths which are carrying 26 flowers. The plants were rested in a cool house, the atmosphere of which sometimes becomes as cool as 40°. They were given no water whilst there. In the growing season they are suspended from the roof of the Cattleya house, where they generally make growths, pseudo-bulbs, a yard in length. *H. Haddon, gardener to J. J. Neale, Esq., Lynward, Park Road, Penarth.* [Many thanks; very fine growth indeed, and well flowered. —ED.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

MARCH 20.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); and some fifty members and visitors.

Beetle in Elm Bark.—Mr. G. S. SAUNDERS reported that the piece of Elm bark sent by Lieut.-Col. ROGERS from Sevenoaks was "attacked by the grubs of the Elm bark beetle, Scolytus destructor. This pest is a very difficult one to destroy, as the grubs live in positions in the bark in which it is impossible to make any insecticide reach them. About sixty years ago some Elm trees in Regent's Park were very badly attacked by this insect, but they were saved by paring off the bark until the grubs were exposed, when the trees were dressed with a mixture of lime and cowdung; the grubs being exposed to the weather would have died even if the trees had not been dressed. The trees made a good recovery. I cannot suggest any other means for killing the grubs. It is an open question whether these grubs ever injure really healthy trees, for the flow of sap in a vigorous tree would probably be very inconvenient to the insects, flooding their burrows with sap. The numbers of this insect in existence would be very much diminished if more care was taken to remove all dying Elm trees, and at once strip off the bark and burn it. All branches which are broken off should be treated in the same manner, and no Elm timber with the bark on should be allowed to lie about, as is the case very frequently at present, forming centres for the propagation of this and other insect pests."

Palm Leaves Diseased.—Mr. MASSEE said that the brown blotches on the palm leaves shown by Dr. MASTERS at the last meeting were due to the fungus Pestalozzia phœnicis, a true parasite forming large blotches on the foliage. The fungus is closely allied to P. guepini, a destructive parasite on tea (see Journal, R.H.S., vol. 28, p. 325, 326).

Primula Sport.—Dr. MASTERS said that the flowers of Primula sinensis shown at the last meeting by Mr. ODELL had a foliose corolla of a purple colour (coloured like the leaves), and a tubular ovary (see p. 194, Fig. 73).

Fungus on Elder.—Mr. SPENCER PICKERING sent a specimen of the Jew's Ear Fungus, Auricularia mesenterica, growing saprophytically on Elder.

Abies nobilis attacked by Chermes.—From Mrs. BRAMWELL, of Worcester, came shoots of Abies nobilis with galls caused by the attack of Chermes abietis or laricis, a fly allied to the aphis, which passes part of its life-history on the Abies, part on the Larch. No efficient remedy for use when large trees are attacked is known.

The Mendelian Laws of Inheritance.—Mr. C. C. HURST gave a lecture on the "Mendelian Laws of Inheritance," illustrating his remarks by means of the blackboard, numerous specimens drawn from a wide range of subjects, afterwards pointing out how the time of fixing any variation might be lessened, and the fixing be not a matter of chance but of certainty (see p. 187). Mr. CHAPMAN said he considered that the degree of development of certain characters depended very largely upon cultivation, and Mr. WORSLEY said that there appeared to be an innate tendency of plants to vary, which was often lost sight of by experimenters. Mr. CRAWSHAY said that in his experiments with Odontoglossums the law of dominance was clearly demonstrated. Mr. ELWES thought the laws could hardly yet be said to be settled. Mr. HURST, in briefly replying, dealt with several of the apparent objections brought forward, and acknowledged the hearty thanks tendered to him for his lucid exposition of the laws.

COLONIAL EXHIBITION.

MARCH 22, 23, 24.—The Royal Horticultural Society held another display of Colonial-grown vegetable products on these dates in their hall at Vincent Square. The present show was in a great measure a replica of the exhibitions of last year, the same piles of tinned and bottled preserves and other dainties were seen, and similar displays of cotton, tobacco, tea, cocoa, rubber, cereals, and a host of other economic products were arranged about the building. Some little attempt at decorative staging was made, notably in the two ornamental groups seen near the entrance. These were composed of large branches of the silver-leaf tree—Leucodendron argenteum—sent over from Cape Colony, arranged around tall Palms, and having a well-proportioned base composed of Azaleas, Boronias, Ferns, small Palms, etc. In other parts of the building the arrangement of an exhibit in the form of a kiosk or a pyramid served to break the monotony of the tables. The Council granted quite a plethora of medals, no fewer than four gold medals being awarded, while others of silver-gilt and silver were freely granted. We doubt if the cheapening of the Society's medals in such a lavish manner is to the best interest of the Society itself, for instance, the granting of a Silver-Gilt Knightian Medal to a box of dried Plums or to a couple of baskets of Apples seemed generous to a fault. We cannot pretend to give a detailed account of all the individual exhibits staged, and many of the products were such as are to be seen every day in the grocers' shops. Some of the large London emporiums made big exhibits from their stocks of tinned, bottled, and dried fruits, preserves, vegetables, sweetmeats, sugars, and the thousand and one things which we obtain from the Colonies.

THE ARMY AND NAVY CO-OPERATIVE STORES, LTD., Victoria Street, Westminster, and its off-shoot, the ARMY AND NAVY AUXILIARY CO-OPERATIVE CO., LTD., Francis Street, Westminster, both had large displays, for which they received a Gold Medal. The WEST INDIAN PRODUCE ASSOCIATION, LTD., late James Philip and Co., 4, Fenchurch Buildings, London, had one of the largest collections of what we may term Colonial groceries, and many fruits, such as Bananas, Pineapples, Plantains, Limes, as well as tobacco, both raw and manufactured; also liqueurs and West Indian wines and sauces. South Africa was largely represented. Interesting was the exhibit of wines, spirits and liqueurs, shown by the VAN RYN WINE AND SPIRIT COMPANY, Cape Town. This firm had hundreds of bottles of the many types of wines, from champagne down to claret, and from brandies to expensive liqueurs. The exhibit demonstrated the suitability of this part of our Empire for viticulture. Timbers from the Cape were shown by the IMPERIAL INSTITUTE, South Kensington, and beautiful indeed they appeared, especially where the wood was polished. The Olive, Stinkwood (Ocotea bullata), Yellow Wood (Podocarpus sp.), and Red Els (Cunonia capensis), were some of the finer woods shown.

The BRITISH SOUTH AFRICA COMPANY showed

a very extensive collection of products from Rhodesia, and it is marvellous to see what has been attempted in this colony, which but a few years since was in a state of savagery. Now it is peacefully occupied with the raising of cotton, Sanseveria for its valuable fibre, rubber, cereals, tobacco, etc., samples of all of which were displayed.

The very large consignments of fresh fruits, which are now reaching our home markets from the Cape, show what is being done in this direction in the South African Colonies. Picked samples of these various fruits—Plums, Pears, Apples, Peaches, Nectarines, Grapes, etc., were freely displayed. The RHODE ISLAND FRUIT FARMS CO., LTD., had one of the best exhibits of fresh fruits, for which they received a Gold Medal, the same award being also granted to the CAPE ORCHARD FRUIT COMPANY, and to Mr. H. ORTON, Cape Colony, for similar groups.

We noticed that many of the softer-fleshed Apples from the Cape, including Warner's King, were badly affected with "black spot." Plums and Pears were the finest of the fresh fruits shown, but they might all have been staged to much better effect. Arranged on the walls of the hall and at other parts of the building were excellent photographic views and paintings of South African scenery, notably some splendid views of the Victoria Falls. Paintings of indigenous plants of Cape Colony were also displayed.

LINNEAN SOCIETY.

MARCH 15.—A letter from Dr. Chr. Aurivillius, Secretary of the Kungl. Svenska Vetenskapsakademien, Stockholm, was read, in which presentation was made of copies by Jean Haagen of the portraits of Carl von Linné by Per Krafft the elder, and Alexander Roslin, in possession of the Academy, sent in acknowledgment of the loan of Linné's "Philosophia Botanica" interleaved and annotated by the author, which had been returned a few weeks ago through the Swedish Legation. A special vote of thanks for this most acceptable gift was moved from the Chair, and carried unanimously.

Prof. F. W. Oliver, F.R.S., F.L.S., then opened the announced discussion on "The Origin of Gymnosperms." He stated that in recent times the balance of opinion has been in favour of descent from the Ferns, the point of closest contact being found in the Cycads, this view gaining material support through the discovery of multiciliate spermatozoids in the last-named group and in Ginkgo, as well as from the recognition of Palæozoic forms (the Cycadofilices) which, whilst retaining the habit and many of the structural peculiarities of Ferns, show a distinct advance in the direction of the Cycads. Now that it is known that many of the forms there included were seed-bearing plants, a new class, the Pteridospermeæ, has been judged expedient for these Spermophytes which have so much in common with the Ferns.

It would appear that a preponderating number of so-called Palæozoic "Ferns" are in reality Pteridosperms which have been hitherto confounded with true Ferns in view of their frond-like habit and lack of distinguishing organs of reproduction. But if the Palæozoic is in reality the "age of Pteridosperms" rather than the "age of Vascular Cryptogams," the Hofmeisterian position becomes altered, and the question is one that should engage the attention of Botanists.

Palæobotanical work has shown that in the Lycopod phylum, seed-like structures were occasionally produced, and this discovery no doubt seems to strengthen what has always been a possibility, namely, that a portion of the Gymnosperms may have had its origin along this line.

Mr. E. A. Newell Arber, F.L.S., followed, on the "Earlier Geological Record of the True Ferns." He pointed out that the Palæozoic Pteridosperms exhibit marked characters in common with the true Ferns, and it is therefore more than probable that they sprang from a Fern-like stock. Thus the Fern-line of descent must be geologically older than the Pteridosperms.

There is, however, every reason to believe that true Ferns did exist in Carboniferous and Permian times. The Botryopterideæ were among the chief representatives. In the fossil state we have naturally no evidence as to the development of the sporangia, and further, the biseriate or multiseriate annulus of Palæozoic sporangia does not agree with that of modern Leptosporangiate spore-bearing organs. It would thus seem better to regard the Palæozoic Ferns as a separate class, from which both the Leptosporangiatæ and Eusporangiatæ were eventually derived. The name Primofilices is suggested to denote this race; since the preferable terms, Archæopterideæ and Palæopterideæ, are not available.

The question may well be asked, Is there any trustworthy evidence of the existence of the Eusporangiatæ in either the Palæozoic or truly Mesozoic floras? In neither is there any evidence at all of the Ophioglossaceæ, and the only instances of possible Mesozoic Marattiaceous fronds, with which he was acquainted, are three in number, and all of Rhætic age. In two species of Tæniopteris, sporangia, resembling those of the modern Marattia, have been found on certain fronds, while in Danæopsis, another related genus, the synangia more closely resemble those of Danæa.

In the Palæozoic rocks we find a plexus of fronds of the Sphenopterid and Pecopterid type, bearing exannulate sporangia, arranged independently in the sorus, or united to form synangia. The great difficulty, at the present moment, is to decide as to the true nature of these fronds. Did they belong to true homosporous Ferns, or were they the male fronds of Pteridosperms? On the present evidence he was inclined to think that a large number will eventually prove to fall under the latter category. We already know that one Pecopteris (P. Plukeneti) belonged to a Pteridosperm. Also the male frond of the Bennettiteæ, a group descended from the Pteridosperms, is known to have borne sporangia not unlike those of the Palæozoic Pecopterids and the modern Marattiaceæ.

The anatomy of the tree-fern, Psaronius, affords the most trustworthy evidence, at present, of the existence of the Eusporangiatæ in Palæozoic times; though there would appear to be little to indicate that this group ever attained to the position of a dominant or ruling type in either the Palæozoic or truly Mesozoic floras.

Mr. A. C. Seward, F.R.S., F.L.S., then spoke on "The Evolution of Gymnosperms: the Position and Ancestry of the Araucarieæ." The genera Araucaria and Agathis may be regarded as surviving members of an ancient group of Gymnosperms distinguished by several well-marked characters from other Coniferales. During the Mesozoic era the Araucarieæ were widely distributed; they are now confined to restricted areas in the Southern hemisphere. His object was to enquire into the statement as to the antiquity of the Araucarieæ, and to ascertain whether the records of the rocks lend support to the view that they represent the oldest section of the Coniferales. A further question suggested by the examination of palæontological data was the possession of characters by Agathis and Araucaria which may be designated primitive.

In view of the widely accepted conclusion that Cycads and Ferns were descended from common ancestors, it is important to consider whether the contention that Conifers, as well as Cycads, are derived from a Filicinean stock is supported by satisfactory evidence. While accepting Cycads as descendants of Filicinean ancestors, the author is led to the conclusion that Conifers, or at least the Araucarieæ, should be referred to a Lycopodiaceous origin.

The proceedings were then adjourned to a subsequent meeting, fixed for May 3, 1906, when Dr. D. H. Scott, F.R.S., Sec. L.S., will resume the discussion.

ROYALE SOCIETE DE FLORE.

MARCH 18.—The meeting of this society was held on the above date in the Botanic Garden, Brussels. The awards made included four Diplomas of Honour, 35 Certificates of Merit of all classes, and two Botanical Certificates. Some of the best plants exhibited were Odontoglossum ardentissimum "Perle de Wolmoe," O. a. Lambeauanum from M. Lambeau, O. crispum var. "Th. Pauwels' Perfection" from M. Pauwels, and Cypripedium Talisman (C. ciliolare × C. Gallieri Hyeanum) from M. Hye de Crom. Listrostachys pellucida, a Congolese Orchid, was exhibited by the Botanic Garden authorities, with an exceptionally well-grown plant of Medinilla magnifica in full bloom. M. de Bievre showed a collection of 75 flowers of Carnation in 30 varieties, and M. Paras, fruit grower to King Leopold, exhibited a set of wonderful Lettuces.

NATIONAL CHRYSANTHEMUM.

MARCH 26.—On this date the executive committee of the above society held a meeting at Carr's Restaurant, Strand. Mr. Thomas Bevan presided. The schedule for the three shows to be held in 1906 was presented in its amended form, and included an additional sum of £20 in value. The amounts offered are: for the October show, £64 8s. 6d.; November show, £248 15s. 6d.; and December show, £50 4s. 0d.

Mr. C. H. Curtis reported on the work of the publication sub-committee, who recommended the issue of a Year Book for 1907 as a means of interesting members, and with the view of obtaining new members. The proposition was carried. The report of the "Early-Flowering" Conference will shortly be distributed to members.

GLOUCESTERSHIRE ROSE.

MARCH 27.—The annual general meeting of the Gloucestershire Rose Society was held on the above date at the Guildhall, Gloucester. It was reported that there was a deficit of £16 17s. 2d. on the last show—when the National Society's exhibition was held in conjunction with that of the local society—which would be met out of the reserve fund. The payments included £65 10s. 6d. to the National Society and £52 10s. for the band. Mrs. Elwes, of Colesborne, was elected president, and Col. the Hon. C. Dutton was appointed chairman in succession to Canon Maddy, resigned. The secretary, Mr. Sidney S. Starr, also resigned, and Mr. S. Gibbins was appointed his successor.

Obituary.

MR. JOHN CAIRNS.—We regret to record the death of this well-known Scottish gardener, which took place with startling suddenness, from heart failure, on March 15. Mr. Cairns was a native of the west of Scotland, having been born in the Colquhoun country, on the banks of Loch Lomond, about 67 years ago. He commenced his gardening career with the well-known Glasgow firm of Austin & McAslan; thence he entered the service of the late Earl of Home at his Lordship's Bothwell Castle establishment, where he was a favourite pupil of the late Mr. Andrew Turnbull. Mr. Cairns was later at Dalkeith Palace gardens, where he remained a number of years under the late Mr. Thomson. Subsequently, and while still a young man, Mr. Cairns was entrusted with the management of the gardens at the Hirsel, which position he occupied until last year with distinguished success, and with

THE LATE JOHN CAIRNS.

marked approval of his employers, the late Earl and Countess of Home, and the present heads of the house, as well as of the various members of their respective families. Altogether Mr. Cairns was in the service of the house of the "Homes" for nearly forty years.

Mr. Cairns was a successful exhibitor, and the finest Leeks ever exhibited in Scotland were shown by Mr. Cairns in Edinburgh. His services were also in frequent request as a judge at the more important metropolitan shows. In particular his knowledge of fruit and of fruit culture was extensive and minute.

Less than twelve months ago Mr. Cairns relinquished his post at the Hirsel, when his employer indicated his appreciation of his services and character by bestowing upon him a generous pension.

Mr. Cairns has contributed to our annual report on the condition of the fruit crops for a quarter of a century at least.

The funeral took place on Monday, 19th inst., in the presence of a very numerous gathering of mourners.

MR. H. M. POLLETT.—The death is announced of this gentleman on the 20th inst., at his residence, Bickley, in his 78th year. Mr. Pollett was well known in horticultural circles, and till lately was a member of the Orchid Committee. He was well known as a printer of horticultural documents.

MR. THOMAS BARTON.—News has reached us of the death of Mr. Thomas Barton, head gardener and land steward at Dunsany Castle, Co. Meath, the seat of Lord Dunsany. Mr. Barton, who had reached the age of 70 years, was an Englishman who went to Ireland 45 years ago, and for the long period of 40 years occupied the responsible position of head gardener and land steward to the Dunsany family, by whom, and by all with whom he came in contact, he was held in the highest esteem and regard.

GEORGE CLINGING.—The death occurred at Catford, on March 20, of Mr. George Clinging, who at one time was a successful exhibitor of Grapes at Regent's Park, Richmond, and the Crystal Palace. Deceased, we are informed, was a Scotsman, and was employed in his early days in Broxmouth Park gardens. On coming to England he served at Marden Park, Sanderstead Court, Ammerdown Park, and Aston Rowant. *Correspondent.*

PLANT PORTRAITS.

APPLE, DER BRITZER DAUERAPFEL. *Garten Flora*, March 15.

IMPATIENS HOLTZII. *Revue Horticole*, March 16. See *Gardeners' Chronicle*.

LOGAN BERRY. *Garden*, March 7.

ROSE, BESSIE BROWN.—*Rosen Zeitung*, February.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Eight days of frequent snow. The past week has been a bitterly cold one. The temperature in the thermometer screen at no time rose higher than 43°, which is about 7° colder than is seasonable. On the two coldest nights the thermometer exposed on the lawn showed 10° of frost, which is only 1° higher than the lowest reading for the three previous winter months. The ground has become very cold, and is now 2° colder at two feet deep, and 4° colder at one foot deep, than is seasonable. Rain or snow fell on all but two of the 17 days ending the 26th, and on eight consecutive days during that period there occurred frequent falls of snow, sleet, and soft hail. On several occasions the ground was nearly covered with snow, but in each case it soon disappeared after it had fallen. The total quantity of rain and melted snow deposited in the rain-gauge during the eight days in question measured nearly an inch. The percolation through both the soil gauges, which had very nearly ceased on the 19th, re-started on the following day. During the week the sun shone on an average for four hours a day, which is slightly in excess of the mean duration for the time of year. Moderate winds and light airs have mostly prevailed, and the direction has been almost entirely some northerly point of the compass. The average amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 14 per cent. *E.M., Berkhamsted, March 28, 1906.*

MARKETS.

COVENT GARDEN, *March 28.*

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Anemones (pink) doz. bunches...	1 6- 3 0
— fulgens	2 0- 2 6
cardinalis	2 0- 3 0
Azalea indica., per doz. bunches	3 0- 4 0
Azalea mollis, doz. bunches	6 0 9 0
Calla æthiopica, per dozen	3 0 5 0
Camellias, doz.	1 6 2 0
Carnations, per dozen blooms, best American various	2 0 4 0
— smaller do.	1 0 2 6
Cattleyas, per doz. blooms	9 0 12 0
Cœlogyne cristata, per dz. blooms	1 6- 2 0
Cypripediums, doz.	2 0- 2 6
Dendrobium Wardianum and nobile, per doz. blooms	2 0 3 0
Eucharis grandiflora, per doz. blooms	2 6 3 0
Euphorbia jacquiniæflora, per doz. sprays	4 0 6 0
Freesias, per doz. bunches	2 0 3 0
Gardenias, per doz. blooms	1 6- 2 0
Hyacinth, dozen bunches	4 0 8 0
Lilac, per bunch	2 0 3 0
Lilium auratum	2 6 3 0
— candidum, per bunch	1 6- 2 0
— lancifolium, rubrum and album	2 0- 3 0
— longiflorum	3 0- 5 0
Lily of the Valley, p. doz. bunches	6 0- 9 0
— extra quality	9 0 12 0
Marguerites, white, p. doz. bunches	2 0- 3 0
— yellow, dozen bunches	2 0 3 0
"Mimosa," dozen bunches	6 0- 9 0
Mignonette, dozen bunches	3 0 4 0
Narcissus, "Paper White," doz. bunches	1 0 2 0
Narcissus, Soleil d'Or	1 0- 1 6
— Golden Spur, per doz. bnchs.	3 0- 5 0
— Horsfieldi	3 0- 5 0
— Incomparabilis varieties	2 0 4 0
— Ornatus	1 0 2 0
— Sir Watkin, per doz. bunches	5 0 6 0
Telemonius plenus, per doz. bunches	2 0- 3 0
Odontoglossum crispum, per dozen blooms	2 6 3 0
— grande, per dozen blooms	4 0- 5 0
Ornithogalum (Star of Bethlehem) per doz. bchs.	1 6- 2 0
Pancratiums, doz.	3 0- 4 0
Pelargoniums, show, doz. bun.	3 0 5 0
— Zonal, double scarlet	6 0 9 0
Primula, double white, per doz. bunches	5 0- 6 0
Ranunculus, doz. bunches	8 0-12 0
Roses, 12 blooms, Niphetos	2 0- 3 0
— Bridesmaid	2 0 5 0
— Kaiserin A. Victoria	3 0 5 0
— Caroline Testout	3 0 5 0
— C. Mermet	2 0 4 0
— General Jacqueminot	2 0 3 0
— Liberty	2 0- 4 0
— Mad. Chatenay	3 0 6 0
— Mrs. J. Laing	3 0 5 0
Stephanotis, per dozen trusses	4 0- 6 0
Stocks (double white) per doz. bunches	2 0 3 0
Sweet Peas, per doz. bunches	3 0 5 0
Tuberoses, per dz. blooms	0 4 0 6
Tulips, per dz. bun.	6 0-10 0
— special quality	12 0 18 0
Violets, 12 bunches	1 0 2 0
— special qual.	2 0 3 0
— Parma, French, large bunches	2 0 4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0
— — medium, bunch	1 6- 2 0
— — short sprays per bunch	0 6- 0 9
— Sprengeri	0 6- 1 0
Adiantum cuneatum, doz. bun.	6 0- 9 0
Berberis, per bunch	2 6- 3 0
Croton leaves, per bunch	1 0- 1 6
Cycas leaves, each	1 6- 2 0
Fern, English, p dozen bunches	2 0- 3 0
Fern, French, doz. bunches	3 0- 4 0
Galax leaves, per doz. bunches	1 6- 2 0
Hardy foliage (various), per dozen bunches	2 6- 4 0
Ivy-leaves, bronze	1 6- 2 0
— long trails per bundle	1 0- 2 0
— short green, doz. bunches	2 0- 3 0
Moss, per gross	5 0- 6 0
Myrtle, per dozen bunches	3 0- 6 0
Smilax, per dozen trails	2 0- 5 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Acacia Drummondi, per dz.	18 0-24 0
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldi, per dozen	4 0 6 0
— larger	12 0-15 0
Araucaria excelsa, per dozen	12 0-30 0
Aspidistras, green, per dozen	18 0-30 0
— variegated, per dozen	24 0-36 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	9 0 10 0
— tenuissimus per dozen	9 0-12 0
Azaleas, per doz.	18 0-30 0
Begonia Gloire de Lorraine, doz.	8 0-12 0
— Turnford Hall,	9 0-15 0
Boronia megastigma, per doz	18 0-24 0
Callas, per dozen	6 0- 9 0
Cinerarias, per dz.	5 0- 8 0
Clematis, per doz.	8 0- 9 0
— in flower	18 0 24 0
Crotons, per dozen	12 0-30 0
Cocos Weddelliana, per dozen	12 0-30 0
Cyclamen, per doz.	5 0- 9 0
— extra quality	18 0-21 0
Cyperus alternifolius, dozen	4 0- 5 0
— laxus, per doz	4 0- 5 0
Deutzias, per doz.	8 0-10 0
Dracænas, per doz.	9 0-24 0
Erica, Cavendishi, per dozen	24 0-26 0
— gracilis, per dozen	12 0-18 0
— melanthera	12 0-18 0
— persoluta	24 0 30 0
Wilmoreana	12 0 18 0
Euonymus, per doz.	4 0- 9 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*)

	s.d. s.d
Ferns, in thumbs, per 100	7 0-10 0
— in 48's, per doz.	4 0-10 0
— in 32's, per doz.	10 0-18 0
Ficus elastica, per dozen	9 0-18 0
— repens, per doz.	5 0- 8 0
Genistas, per doz.	6 0- 9 0
Hyacinths (3 in pot), per doz.	6 0- 9 0
Hydrangea Hortensia, per dozen	9 0-15 0
— Thos. Hogg	12 0-18 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen	12 0-21 0
Latania borbonica, per dozen	9 0-18 0
Lilium longiflorum, per dozen	24 0-36 0
lancifolium, per dozen	18 0-24 0
Lily of the Valley, per dozen	18 0 30 0
Marguerites, white, per dozen	5 0- 8 0
Mignonette, per dozen	6 0 8 0
Narcissus, per doz.	4 0- 6 0
Privet, golden, per dozen	5 0-12 0
Pelargoniums (Zonals), per dozen	5 0- 8 0
Rhododendrons, per doz.	18 0-30 0
Roses, per dozen	12 0-18 0
Selaginella, dozen	4 0 6 0
Spiræa japonica, per dozen	6 0- 9 0
Stocks (Intermediate), per dozen	6 0- 8 0
Tulips in boxes, per doz. bulbs	5 0- 9 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples :— English, per bush.	6 0- 9 0
Californian Newtown Pippin, per ½ barrel	16 0-18 0
per case	10 0-21 0
Nova Scotians, per barrel :	
— Starks	18 0-24 0
— Spys	25 0-30 0
— Fallawaters	26 0 27 0
Wagners	18 0-19 0
— Russets	26 0-28 0
— Baldwins	21 0-25 0
Ribston Pippin	19 0 —
— Blenheim Pip'n	18 6-21 0
— Greening	25 0-26 0
— King of Tompkins County	25 0 —
Canadian, per barrel :	
— New York Imperials	25 0-28 0
— Russets	22 0-30 0
— Greening	22 0 30 0
— Baldwins	18 0-25 0
Bananas, bunch	
— No. 1 quality	7 0- 8 6
— No. 2 quality	5 6- 6 6
— Extra quality	8 6- 9 0
Giants, per bunch	10 0-12 0
Jamaica	4 6- 6 0
Loose, per doz.	0 8- 1 3
Cranberries, case	13 0-14 0
Dates, Tunis, per box	0 4 —
— Egyptian, cwt.	19 6
Figs, per dozen	10 0-18 0
Grape Fruit, p. box	16 0-25 0
Grapes, Alicante, per lb.	2 6- 3 6
Gros Colmar, per lb.	2 3 4 0
— (Cape), small cases	2 0- 4 0
large cases	5 0 8 0
Grapes, Almeria, per barrel	7 0 21 0
Lemons :	
— Messina, case	8 0-12 6
Lychees, per box	0 10- 1 0
Melons, each	12 6-20 0
Nuts, Cobnuts, per doz. lb.	9 0
— Brazils, new, per cwt.	45 0-55 0
— Spanish, p. bag	42 0-43 0
— Barcelona, per bag	24 6 -
— Almonds, per cwt.	36 0 —
— Monkey Nuts, per bag	18 0 —
— Walnuts, dried, cwt.	35 0 —
—Chestnuts, Italian per bag	13 6-15 0
Cocoanuts, 100	10 6 13 6
Oranges, Valentia, per case	9 0-35 0
Murcia	6 0- 7 0
— Seville, p. box (200)	8 0 8 9
— Navel	11 0-13 0
— Jaffa	9 6 10 6
— Jamaica	10 0 —
Blood	9 0 11 0
— Mandarines, per box (25)	0 9 —
,, (50)	1 0 1 2
,, (90)	3 9 —
— Palermo, per 100	3 0 4 6
Pears (Cape), per box	4 0 6 0
— Californian, box	4 6-12 0
— stewing varieties, per ½ bush.	2 6- 3 0
stewing, crate	10 6
Pineapples, each	2 6- 7 0
Plums (Cape), per box	3 6 6 0
Strawberries, p. lb.	3 0 8 0

Vegetables : Average Wholesale Prices.

	s.d. s.d.
Artichokes, Green French, p. doz.	2 0- 3 9
— Ground, ½ bush.	1 3- 1 6
Asparagus, per bundle :—	
Dijon	3 0
Giants	8 0-16 0
Spanish	1 9- 2 6
— Paris Green	5 6- 6 3
— Sprue	0 9- 1 0
Beans, French, p. lb.	0 4- 0 7
— Broad, per pkt.	0 6
— Broad, per pad (loose)	2 6- 4 0
— Flageolet, box	0 9 —
— Home grown, per lb	0 9-0 10
— Channel Island	0 9-0 10
— Madeira, bask.	2 6 3 0
Niggers	4 0- 5 0
Beetroot, bushel	1 0- 1 3
Broccoli, per doz.	1 6- 2 0
Cabbages, per tally	3 0- 4 0
— red, per bushel	2 0 —
Carrots, French pad	2 6- 3 0
— cwt., unwashed	1 3- 1 6
— bag, washed	2 0 2 6
— new, per dozen bunches	4 0- 8 0
Cauliflowers, doz.	2 0
Italian Heads, per basket	2 6 —
Cornish, per crate	6 0 —
Celeriac, per doz.	2 6 —
Celery, per dozen bundles	6 0-12 0
Chicory, per lb.	0 1½-0 2
Chow Chow, per dozen	1 6- 2 0
Cucumbers, dozen	2 6- 4 0
Endive, per dozen	1 8- 2 0
Horseradish, foreign, per dozen bundles	10 0-12 0
Kale, Scotch, bush.	0 9- 1 0
Leeks, 12 bundles	2 0 3 0
Lettuce, Cos, per [illegible]	4 0 6 0
Lettuces, French, per doz.	0 8- 1 4
Mint, per dozen	4 0- 6 0
Mushrooms (house) per lb.	0 8-0 10
— Buttons, per lb	0 10 —
Mustard and Cress, per dozen pun.	1 0 1 6
Onions, Valencia, per case	6 6- 7 0
— Dutch, bag	3 0- 3 6
— pickling, per bushel	2 0- 2 6
— French, ½ bag	2 3 -
— Spring, dozen bunches	2 0- 3 0
Parsley, 12 bunches	2 0 3 0
Parsnips, per bag	2 0- 2 6
Peas (French flats)	3 0- 5 6
— per packet	0 3 0 4
Potatos (new) :—	
Canary, cwt.	12 0 14 0
— French (new), per lb	0 2½ —
— Channel Island Kidneys	0 5 —
— Algerian, cwt	18 0 —
— ,, barrel	18 0 -
Radishes, French breakfast, p. dz.	1 3 1 6
Rhubarb, per doz.	0 9- 1 0
Salsafy, per dozen bundles	4 -
Savoys, per tally	5 0 7 0
Sea Kale, p. punnet	1 0 1 3
Spinach, French crate	2 0
— French, pad	4 0 5 3
Sprouts, ½ bushel	1 3
Tomatos. — foreign, bundle of 4 boxes	8 0 11 0
Turnips, per doz. bun.	1 0 1 6
— bags	2 0 2 3
— new, per dozen bunches	9 0
Turnip Tops, bush.	1 0 1 3
Watercress, per doz. b.	0 4 —

Potatos.

Blacklands, 60s. to 65s. ; Bedfords, 65s. to 75s. ; Lincolns, 55s. to 70s. ; Kents, 70s. to 80s. ; Dunbars, 80s. to 95s. per ton. —*John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Next week the market will be open for the sale of pot plants every morning, but unless improvements take place, both in the weather and in the amount of trade done, I am afraid it will not be of much advantage to either growers or buyers. During the past week business has been very dull, while supplies all round have been over abundant. Most spring flowering plants are now in good condition. Mignonette is very good from several growers. Intermediate Stocks, especially those of the white variety, are very fine. Hydrangea Hortensia with good inflorescences of well-coloured flowers are seen. The variety Thomas Hogg is also very good. Polygonatum multiflorum is pretty, but does not sell freely. Supplies of Spiræas are excessive. S. astilboides floribunda is one of the best for market purposes, although many growers still rely upon the old favourite "Japonica." Cinerarias are plentiful and good. Genistas are seen on many stands, and their prices are low. Cyclamen sell slowly. Rose Little Pet is seen in well-flowered plants from Mr E. Rochford, and also from Mr. H. B. May, who has also started marketing large plants of Crimson Rambler. Some fairly good hybrid perpetual Roses are sent by Mr. Kirby. Madame Levavasseur is procurable in well-flowered plants. Deutzia gracilis, although in good condition, has little demand. Lilium Harrisii can be had in dwarf plants, well flowered. Good plants of Indian Azaleas and A. mollis are seen. Lily of the Valley in pots is remarkably good. This plant is also seen in boxes, with strong spikes of bloom and good foliage. Large quantities of Hyacinths are still seen, but some are rather far advanced. Many of the Tulips are past their best condition. A few fresh pots of the later spring varieties are to be had.

Hardy Flower Roots and Bedding Plants.

Although the weather has not been favourable, large supplies of garden plants are coming in. Many spring flowers which have received slight protection are in flower, including Primroses, Polyanthus, Pansies, Daisies, &c.

Cut Flowers.

The cold weather has checked supplies to some extent and, generally, higher prices prevail, but there is a surplus of many things. Roses were probably never quite so much over done as at the present time, especially those of high quality with good foliage and long stems. Capt. Hayward, Caroline Testout, Mrs. Sharman Crawford, La France, Madame A. Chatenay, The Bride, Kaiserin Augusta Victoria and Catherine Mermet, are all seen in splendid quality blooms. Some may realise good figures, but many have to go very cheaply, and when one sees street flower sellers carrying large bundles of Roses from the market, it is quite evident that prices are bad. Carnations are remarkably good. It is chiefly American varieties that are seen, but I find there are some English sorts. Britannia makes top prices among "scarlets." Leander is good, and very large quantities of Mrs. Leopold de Rothschild are also seen. Daffodils continue over plentiful. Tulips are getting a little past their best and are inclined to advance in prices. Liliums have also a tendency to become dearer. L. candidum is to be had in good quality blooms. Flowers of L. lancifolium rubrum are better in colour than they have been. Auratums are very good. Callas may considerably advance in prices before Easter. Gardenias are cheap. Supplies of Lily of the Valley are abundant. Violets, both English and French, are good. There is no lack of Wallflowers, Primroses, Myosotis, and other spring flowers, in spite of the cold weather. With the exception of Narcissus there is a falling off in supplies of imported flowers. Foliage of all kinds is well supplied. *A. H., Covent Garden, March 28.*

ANSWERS TO CORRESPONDENTS.

Acetylene Gas Refuse: *R. G.* It has been found that for horticultural purposes this waste may be considered as lime, and used as such in the cultivation of crops. See note in the issue of *Gardeners' Chronicle* for February 13, 1904, p. 108.

Apple Seedling: *Novice.* It is not necessary to first graft your seedling Apple tree before expecting it to produce fruit. Every seedling may be expected to fruit after the lapse of an indefinite period, which will be longer or shorter according to the conditions of cultivation and the particular habit and characteristics inherited by the plant. If allowed to flower and fruit before grafting or budding is done there is the bare possibility that the seedling may be a variety possessing qualities superior to any other in cultivation. The advantages to be obtained by grafting are mainly two, and they are as follows: 1. The seedling is made to bear fruit at an earlier age than it would be capable of doing otherwise. 2. The seedling instead of remaining of an indefinite character, with the probability that it will prove to be less valuable than existing varieties, is converted into a variety specially selected by the cultivator. If you wish to graft the young tree turn to p. 199, where directions for carrying out this operation are given and illustrated. But the operation is a delicate one, and if you have had no experience whatever you had better obtain a practical lesson from someone in the neighbourhood.

Bulbs: *H. S.* Mites and fungi are either absent, or present in such small quantities as not to account for the absence of roots. Badly matured bulbs always fail to produce roots in sufficient quantity.

Correction: Lycaste Skinneri "Beauty." In the report of the Royal Horticultural Society's Show held on March 20, the award to this plant should have been recorded as a First Diploma, not as a Second.

Figs Diseased: *A. R. S.* The plant is badly affected with a fungus disease, Cercospora Bolleana, which was figured and described in the *Gardeners' Chronicle*, July 7, 1900, p. 5. Try spraying with dilute Bordeaux mixture.

Glazed Thrips: *Horti.* What do you mean by "Glazed" thrips? If you mean the common insect pest so frequently seen on Azaleas and other plants, you may destroy them by fumigating with one of the nicotine preparations, or by syringing with hot water containing plenty of soft soap in solution and a little paraffin, adopting one or other remedy according to the nature of the particular plants attacked. You might even treat them to an application of hydrocyanic acid gas, and in that case you should refer to the figures on p. 203 which show how the operation may be carried out without risk to the operator.

Hippeastrum (Amaryllis): *A. D.* We have failed to discover any mites in your bulb, although the appearances seemed to indicate the presence of thrips or some other insect which injures the plant. Perhaps the plants will outgrow the condition, as the bulb sent is of considerable strength. If the trouble continues write us again.

Lawn: *A. G.* The presence of Moss is an indication that the ground is very poor, or is shaded, or that it requires draining. If the case is not a very bad one, let the worst of the Moss be scratched off with a rake, and then apply a top-dressing of fine soil containing a liberal quantity of a nitrogenous manure. Coarse sand is of little if any value, but you might apply wood-ashes advantageously.

London Holiday: *J. B. H.* In the immediate locality there are the nurseries of Jno. Laing & Son and Messrs. J. Carter & Co. But you could easily visit such nurseries as those of J. Peed & Sons, West Norwood; Jas. Veitch & Sons, and W. Bull & Sons, Chelsea; B. S. Williams & Son, Holloway; W. Cutbush & Sons, Highgate; R. & G. Cuthbert, Southgate; &c. There will be fortnightly shows of the Royal Horticultural Society on May 1 and May 15 in the Hall at Vincent Square, Westminster, and an exhibition by the Royal Botanic Society, on May 16, in the Society's gardens at Regent's Park. You should certainly make an effort to see these exhibitions, and to make several excursions to the Royal Gardens, Kew.

Muscari: *G. H., California.* The genus is known under the familiar name of Grape-Hyacinth. The species M. botryoides, as the Pearls of Spain, Heavenly-Blue Grape-Hyacinth, &c.

Names of Plants: *Bella.* Berberis Darwinii. 1, a variety of Narcissus incomparabilis; 2, a variety of Narcissus pseudo Narcissus.—*W. T., Gloucester*: There are two Dendrobiums, the flowers of which closely approach each other when withered, as your specimen was when it reached us. If it has long slender pseudo-bulbs 2 feet or more it is Dendrobium Pierardi. If the pseudo-bulbs are about 1 foot in length, and stout in proportion, it is Dendrobium primulinum. Both species vary considerably but may be readily distinguished from fresh material. If you had placed a little green moss with the flower it would have travelled better. *Thos. O.* Senecio Petasites.—*W. B.* Columnea erythrophæa.—*A. G.* 1, Pentas carnea. 2, Probably a species of Æschynanthus; send when in flower.—*A. W. T.* Solanum jasminoides.—*A. C. H.* 1, Cypripedium Lawrenceanum; 2, Cypripedium callosum; 3, Odontoglossum crispum; 4, Lælia Jongheana.—*E. Y.* 1, Odontoglossum crispum guttatum, not of good quality; 2, Oncidium insculptum; 3, Odontoglossum cirrosum.—*W. E. S.* Odontoglossum Hunnewellianum. In one of the localities of Odontoglossum crispum, O. Hunnewellianum grows with it, and has resulted in the natural hybrid between the two known as O. Adrianæ. —*A. H.* Eurya latifolia variegata, a nearly hardy shrub. The other plant is Primula denticulata, a good variety of it.—*E. G. L.* Olearia myrsinoides.

Oxalis: *G. H. California.* There are all sorts of common names for this plant. In *A Dictionary of English Plant Names*, by James Britten and Robert Holland, the following are enumerated under the species: O. Acetosella, Alleluia, Allolida, Bird's Bread and Cheese, Bread and Cheese, Cheese-and-Bread (Bird's), Claver Sorrell, Clover (cuckoo's, gowk's, or sour), Cuckoo Bread or Bread and Cheese, Cuckoo-cheese, Cuckoo-flower, Cuckoo-meat, Cuckoo Sorrel, Cuckoo-sour, Cuckoo-spice, Cuckoo's Victuals, Grass (sour), Green Sauce, God A'mighty's Bread and Cheese, Gowk Meat, Hallelujah, Hare's Meat, Hearts, Lady Cakes, Lady's Clover, Lady's Meat, Laverocks, Lujula, Rabbit-meat, Shamrock, Sheep Sorrel, Sleeping Beauty, Sleeping Clover, Sorrel, Sorrel (French Wood), Sour Clover, Sour-sabs, Stabwort, Stob-wort, Stopwour, Stubwort, Trifoly (sour), Woodsore, Woodsour, or Woodsower. So much for the value of "popular" names!

Para Rubber: *Excelsior.* Owing to the greatly increased demand at the present time for Rubber for the making of tyres for motor vehicles the rubber trade has developed very considerably. Several limited liability companies have been recently formed, and increased attention will doubtless be given to every possible source of Rubber, leading probably to considerable planting. At the same time, there are obvious risks to be undertaken by anyone electing to go out for the purpose of engaging in the cultivation and tapping of the Rubber trees. You should write to the advertisers to ascertain whether the terms offered by them are sufficient compensation for such risks.

Peach-shoots Diseased: *C. B. E.* The shoots are affected by a fungus—Botrytis cinerea. See answer to *Cymrw* in last week's issue, p. 192.

Potato: *Horti.* The botanical name for the Potato and all its varieties is Solanum tuberosum.

Rhododendron. "Lady Alice Fitzwilliam": *J. Cairns, Wortley Hall Gardens, Sheffield.* Yours are excellent specimens of this fragrant greenhouse Rhododendron. Your plants must be growing very vigorously, and that they flower freely the specimens before us afford ample proof. Many thanks.

Roots: *Firs Lane.* We cannot understand what is meant by such an indefinite letter. What are the crops you wish to cultivate for profit, and have you had any experience in the work?

Strawberry Plants Unhealthy: *C. B. E.* The pale colour of the foliage is probably the result of either an excess or of a deficiency of a particular form of food stimulant in the soil. Give the plants an application of clear soot water at the roots at intervals of a few days.

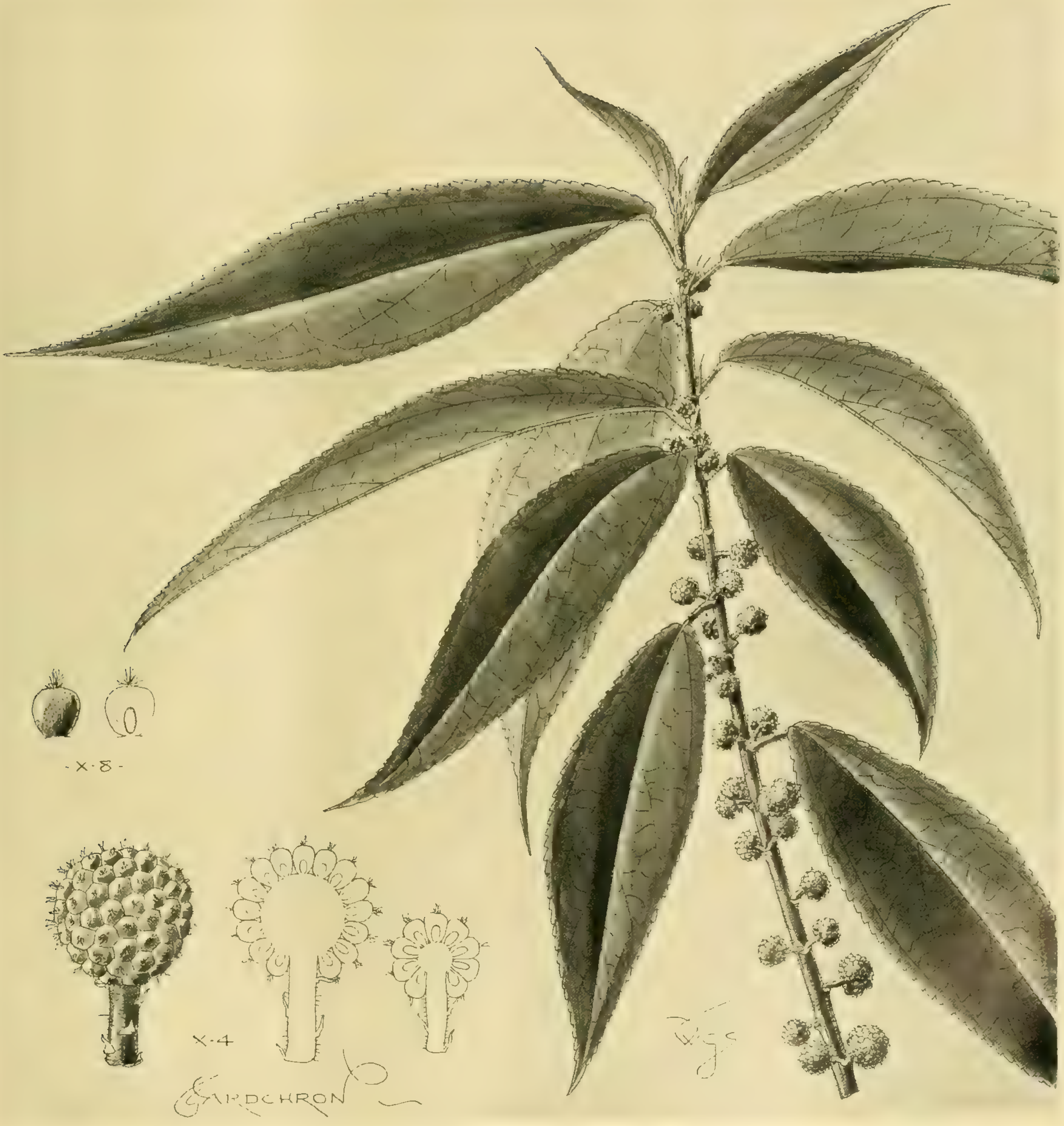
Suspended Baskets: *T. S.* We are surprised to hear that Nephrolepis will not succeed with you; the position must be draughty in the extreme. However, such hardy plants as the Periwinkle, of which a variegated form is very beautiful, should grow well enough. We are not surprised that Begonias and Tradescantia failed, for they are easily injured. Ivy-leaved Pelargoniums stand much rough treatment, and nothing is more beautiful for a suspended basket.

Vines: *J. McI.* There is nothing in the specimens received to indicate the cause of failure, but even the rods themselves appear to be dead. Being on the spot you may be able to determine whether the trouble first arose above ground or below the surface of the soil. Are the roots alive and in good condition?

Violets Failing: *Anxious.* The disease is the work of a fungus that is perpetuated by means of spores. These are very minute bodies that lurk in the soil or in crevices of the frame. It will not be advisable to grow Violets in the same frame again until you have thoroughly sterlised both the soil and the woodwork of the structure, using a weak solution of carbolic acid for the purpose. Be careful also to burn the old plants, and as you intend planting afresh, it will be better to burn the entire old stock. Violets are not fastidious plants in the matter of soil, for they will succeed in most kinds, providing it is well drained and cultivated. They should not be given a hot, dry position in summer, but will succeed well on a border facing to the north. The plants require plenty of moisture during the summer time, and the side shoots should be removed in order to secure the development of fine plump crowns.

Communications Received. Stellata (Next week)—G. A. (Many thanks for photograph. The double spathed Richardia is a familiar visitor at this office)—W. M. (We have handed your letter to our publisher)—H. F. McM.—H. E. (Rev.)—J. H. V.—W. W.—F. M.—J. F. D.—W. B. H., Cork—John Booth, Berlin—E. de W., Brussels—J. W.—W. B. H., Kew—E. H. J. (many thanks, please send us the article)—H. B.—W. B.—E. G. O.—Hortus—A. H. W.—W. S.—T. O.—C. E. D.—E. R.—W. H. C.—H. W. W.—W. I.—J. W. M.

Supplement to the "Gardeners' Chronicle"



Debregeasia velutina.
Fruits mulberry-like, of orange-yellow colour.

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Gardeners' Chronicle
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COVENT GARDEN MARKET.*

THE congestion, as regards early morning traffic at this market, has furnished some excuse to the railway companies for the delay in the delivery of goods which so often causes both loss and annoyance to sellers and buyers. It is needless to say that the most has been made of the difficulty in self defence, and salesmen do not hesitate to say it has been grossly exaggerated. Still, the fact remains that if wagons arrive late at the market at the busiest time, when all available space is packed to the utmost limit, there must be some delay, and it is to some extent the same in leaving the market after the load is discharged.

Two means are operating to reduce this trouble, one being the extension of the days and hours of business, and the other is the increasing employment by large growers in the metropolitan district of motors and tractors. Considerable business is now transacted upon what used to be considered the "off days," i.e., Monday, Wednesday, and Friday, as well as upon the regular market days, Tuesday, Thursday, and Saturday. Further, though the flower market is closed at 9 a.m., and a large proportion of the trade in serving retailers takes place before that hour, both with fruits and vegetables, yet the business transacted throughout the day is much larger now than formerly. One reason for this is that Covent Garden is not merely a London market; it really acts as a great distributing central mart, and thousands of tons of produce, especially fruits, are sold there for despatch to provincial towns.

The employment of motors and tractors for market wagons is helping to reduce the crowding, and though the influence is not very evident at present, there can be little doubt it will extend considerably in the near future. From twenty to thirty of such substitutes for horse labour may now be seen at times in the market approaches, and by their means much heavier loads are brought in more quickly. Two or three examples will illustrate this—for instance, Messrs. Lobjoit, of Heston, near Hounslow, send three tractors to Covent Garden three days every week, and one on the three other days, the load averaging 5 tons. Mr. J. Rochford, of Turnford Hall, Broxbourne, in a similar way usually sends 2 tons of produce a day in winter, rising to 15 tons a day in summer, chiefly Grapes, Tomatos, and Cucumbers, from his 35 acres of glass houses. He also states that the distance—17 miles—can be covered in 2¼ hours. Mr. George Leonard, New Road, Shepperton, uses a Foden steam wagon, which does the work of 6 or 7 horses, and can, when required, go to Covent Garden and back, a distance of 38 miles, every day. He states that he can send 200 bushels of produce on the Foden and the same quantity on a trailer wagon, a total of 400 bushels per journey.

But if the business of Covent Garden continues to increase as it has done, some more fundamental alterations will become absolutely necessary. It has often been said that it is surprising that the London County Council, with its liberality in the expenditure of metropolitan finances, has never included Covent Garden in its sphere of operations. At the Board of Agriculture's Fruit Industry Committee, it was stated: "We all recognise that it is a very anomalous condition that perhaps the biggest market in the world to be in private hands," and it was further remarked with unquestionable authority that the Duke of Bedford "offers no sort of opposition to the market passing into the hands of a public authority." The purchase price would no doubt be a high one, but one could imagine an ideal market being created that would be a substantial improvement upon the present one. Like many other ideals, however, perhaps the cost of the realisation would exceed the gain, and at present there does not seem the slightest prospect of its being attempted. It is only fair to add that in the course of the enquiry referred to, Mr. George Monro gave it as his opinion that "the Duke has done more for the market in bringing in surrounding property for the use of the market than the County Council or Corporation would have done."

The question of tolls has given rise to many disputes and some bitterness, partly owing to insufficient knowledge concerning them, and partly owing to the fact that they are founded upon antiquated legislation and regulations quite out of date now. Under a dark arch near the superintendent's office in the market will be found a code of regulations painted upon the wall, and dated August 20, 1828, but in the long period that has elapsed since they were drawn up, the alterations in method of business and the nature of produce have been enormous.

As regards the chief fruits, it is there stated that the toll to be paid is ½d. per sieve or bushel, and the bushel was then the common measure. This is the rate still in force, though within the past 20 or 30 years the tendency has been to materially decrease the size of the baskets or packages used. Half sieves and peck baskets with handle baskets and boxes of various sizes, mostly considerably under the bushel as regards home-grown produce, have come into general use, but the ½d. is still charged per package. It has also been represented that the decreased value of produce due to competition has also placed the grower at a disadvantage, all of which is perfectly true, and there certainly does appear to be a good case for some modification.

At the same time there is another side to the question when the better quality fruits are considered alone as the actual *ad valorem* percentage is very small. This was well brought out at the Fruit Industry Enquiry, where one witness complained somewhat strongly about the heavy tolls he had been charged on his Grapes. After further questions and analysis, it appeared that it only amounted to about 2 per cent. on the value, which could hardly be counted a ruinous imposition. In times of glut, or with low-priced produce, the toll becomes much more serious, and to meet the different conditions of the times a reasonable modification might well be made. In fact, it is not too much to expect that after a lapse of over 70 years a new code of regulations should be drawn up.

Upon one point there is much confusion, and that is the charging of the tolls a second time in the same market. But there is no question whatever respecting its legality if a second sale is effected within the market by the exposure or "pitching" of the goods. The tolls can be collected apparently as many times as that takes place. It may be legal, but it certainly seems to be inconsistent with equity, though no doubt there is something to be said on the other side.

The trade of Covent Garden is conducted mainly in four ways. First, the grower can take his cart or wagon into the market and sell direct, for which tolls are paid of from 4d. to 1s. 6d. per day, or yearly cart stands can be had at the rate of 1s. per square foot, per annum, which works out at the rate of £2,178 per acre, not by any means an extravagant charge for such valuable land, large though it may appear.

Secondly, a man can have a stand or stall and sell his own or other people's produce, and the same rate is charged as already mentioned, namely, 1s. per square foot, per annum, with 3d. per foot extra if the stand is under cover. The salesmen who do not hold auction-sales come under this heading, but most of them rent special premises either in or out of the market.

A large part of the business in Covent Garden is transacted through salesmen to whom goods are consigned by growers, who have no further trouble in the matter as regards the collection of accounts, etc. The salesman sends his cheque after deducting his commission and the market tolls, and all the grower has to do is to make sure he is dealing with a trustworthy firm.

By the auction-sales, which are chiefly held in the large Floral Hall, the greater part of the imported fruits are distributed. Nine firms hold sales there, generally on Mondays, Wednesdays, or Fridays, and the amount of produce disposed of is almost fabulous in amount. At special seasons the business is enormous, and this is especially so just before Christmas. I have known two firms to sell by auction in one day over 23,000 barrels, boxes, packages, or cases of fruits. No fewer than 10,000 Pineapples have been offered at one time, and 18,000 boxes of Mandarine Oranges in two days' sales. These sales give a better idea of the business done in Covent Garden than any other part, and it can be easily understood that when one salesman alone claims with undoubted truth that he disposes of some thousands of tons of fruit every year, the total amount is practically incalculable.

The retail trade is small in comparison with the other three methods, and is mainly confined to the shops and stalls in the central avenue, though the floral business transacted is important.

In the central covered market, fruits, flowers, and vegetables are sold, as well as from the cart and wagon stands around it. Upon the south side adjoining Southampton and Tavistock Streets is a large space devoted mainly to vegetables, while above a portion of it has been erected the new foreign flower market. The main flower market adjoins Tavistock Street, and extends to Wellington Street, while the Floral Hall is on the north side of the central market, or can be entered from Bow Street. These details are for the benefit of gardeners strange to London, as certainly no horticulturist visiting the metropolis should fail to spend a few hours in Covent Garden. A volume might be written about this great mart, with which I have only been able to deal imperfectly in these notes. *R. Lewis Castle.*

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* See previous article on page 163.

KEW NOTES.

Corylopsis Griffithii (Hems.).

This hazel-like shrub is flowering on the west side of the wall between the herbaceous ground and the rockery. It is a new species, native of Bhotan and the Khasia Mountains. Although growing at elevations of 5,000 to 8,000 feet, it requires the protection of a wall at Kew.

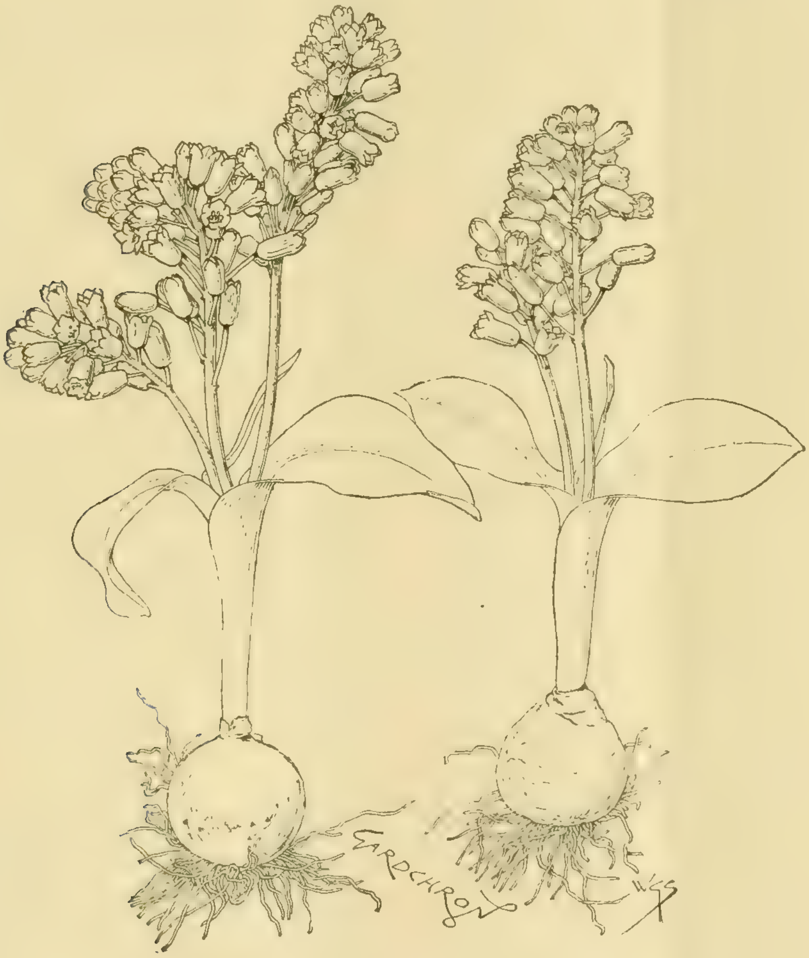

Fig. 81.—Hyacinthus lineatus (syn. Bellevalia heldreichii).

Seeds were forwarded to Kew from Calcutta by Dr., now Sir George, King in 1879. Sometimes attaining the height of a small tree, Sir Joseph Hooker records having seen specimens 20 feet in height. The subject of this note is 5 feet in height.

It is deciduous and flowers before the leaves make their appearance. The leaves are broadly-ovate, 5 to 6 inches in length, and nearly as wide, pale green above, pubescent beneath. The numerous pale yellow flowers are borne on pendulous racemes about 2 inches in length. The scent is not unlike that of Cowslips. The bracts at the base of the raceme are of large size, and very similar to the flowers in colour.

It is figured in the *Bot. Mag.*, tab. 6779, as C. Himalayana, but subsequent examination has led Mr. Hemsley to make the plant a new species. Two other species are in cultivation, C. pauciflora and C. spicata; both are natives of Japan.

Kennedya prostrata var. Marryattæ.

For draping the roof or covering bare pillars in greenhouses or conservatories, this Australian evergreen, leguminous climber is a most useful subject. It is readily propagated from seeds or cuttings, and grows very fast. A plant in No. 4 Greenhouse has flowered all through the winter, and still has a good number of flowers on it. Planted out in a bed of peat at the foot of an iron pillar, the foliage completely hides the pillar from view. If grown in pots and trained round stakes or on a balloon, the plant is also very effective.

The leaflets are three in number, covered with down, as also are the stems. Flowers scarlet, usually produced in clusters of four. The plants produce seed-pods as freely as flowers.

The species, K. prostrata, is figured in *Bot. Mag.*, t. 270, under the name of Glycine coccinea. *A. O. March.*

Hyacinthus lineatus.

Under the name of Bellevalia lycaonica Siehe, bulbs were received in the autumn of 1904 from Mr. W. Siehe, of Mersina, in Asia Minor. It is now in flower in a cold house, growing in pans, and is a charming little plant. It is about 5 inches in height, with two or three leaves near the base of the stem, each about 2 inches long. The flowers are turquoise blue in colour, borne on short pedicels and produced in heads of from 10 to 20 in each. It is, however, not a new plant, but is Hyacinthus lineatus, which was figured in the *Gardeners' Chronicle*, 1901, XXXIX., p. 103. This plant was first collected in 1845 by Heldreich in Adalia, growing in chalky soil at an elevation of 3,250 feet. It was also collected in the Cilician Taurus by Mrs. A. E. Danford in June, 1876. Bulbs were first received at Kew in 1892, from Mr. E. Whittall, of Smyrna, and it has been in cultivation there ever since, proving quite hardy on a warm border in somewhat sandy soil. The flowers vary in colour, for amongst the batch is a cream coloured form having purple stamens, a most distinct variety. H. lineatus belongs to the Bellevalia section of the genus, which also includes the well-known H. azureus, and was described under the name of B. Heldreichii by Boissier. It is more of a plant for the collector than of general garden value

Erigenia bulbosa.

This interesting and rare little plant, which is called in the United States the Harbinger of Spring, is now in flower in the rock garden. It is found wild in shady rich soil in the Eastern States, and comes into flower in March and April. The root is tuberous and produces a stem 3 to 6 inches high with a solitary leaf, bearing an umbel of white flowers with dark purple anthers. *W. I.*

EFFECT OF PLANT-GROWTH, AND OF MANURES, UPON CARBONATE OF LIME IN THE SOIL.

An interesting paper upon the changes which take place in the amount of carbonate of lime (chalk), which are brought about by natural agencies, by manuring, and particularly by the growth of plants, has been contributed to the Royal Society's Proceedings by Messrs. A. D. Hall, M.A., and Dr. N. H. J. Miller, of the Rothamsted Experiment Station.

Since Cavendish discovered that carbonate of lime dissolves in rain-water charged with carbonic acid, and ascertained the presence of bicarbonate of lime in many natural waters, it has been recognised that the carbonate of lime (chalk) present in most soils must be subject to regular loss.

As the soils of the Rothamsted experimental plots and the drainage waters collected from the plots afford peculiar facilities for the study of this important question, they have naturally formed the foundation of the investigations by the authors.

The natural surface soil on the Rothamsted Estate, and in Hertfordshire generally, contains little or no carbonate of lime, but during the eighteenth century and earlier very large quantities of chalk were applied artificially until it formed 5 per cent. or so of the surface soil. The method adopted was to sink pits through the clay to the chalk, which was then lifted and spread in considerable quantities. And the most experienced Hertfordshire farmers agree that chalking of lands so circumstanced is the best mode of culture they are capable of receiving.

This carbonate of lime is being gradually dissolved out by the rain water percolating through the soil, and the loss will amount to about 800 lbs. to 1,000 lbs. per acre per annum.

The rate of loss is increased by the use of sulphate of ammonia, and is diminished by the use of nitrate of soda or organic *débris* like farmyard manure.

The normal growth of crops tends to restore a certain amount of carbonate of lime and other bases to the soil, because the plant in feeding upon the neutral salts dissolved in the soil water takes more of their acids than of their bases, leaving behind a basic residue combined with carbonic acid excreted from the plant roots.

With ordinary agricultural and horticultural crops the restoration of bases must be considerable, probably supplying sufficient base for the nitrification process which is always going on. This explains why many soils containing little or no carbonate of lime (chalk) remain healthy under ordinary cultivation, provided that acid manures like sulphate of ammonia or superphosphate (especially the lower grades) are not used on them.

These researches also explain one or two other points which have been observed in connection with the use of nitrate of soda as a manure.

It has long been noticed that the continued use of nitrate of soda is very destructive to the texture of a clay soil, intensifying all the clay properties, rendering the soil persistently unworkable when wet, and forming hard and intractable clods when dry. The ultimate cause of such an effect is the "deflocculation" of the fine particles composing the soil; they are no longer bound together in loose aggregates, but are separated so as to give the soil its most finely grained character. The deflocculation is much diminished where superphosphate (an acid manure) is used in conjunction with the nitrate of soda. *J. J. Willis, Harpenden.*

THE FERNERY.

SPRING TREATMENT OF HARDY FERNS.

As the early spring is undoubtedly the most favourable time for dealing with hardy Ferns, either in the way of forming new rockeries or beds for their accommodation or for repotting or re-planting and general overhauling, no time should now be lost before doing what is required. Later on, when growth has definitely commenced, and the new fronds are rising, not only are these very apt to get damaged by the handling, but the roots have so much to do in keeping them going that any damage to them in the operations is likely to constitute a serious check. It is therefore obvious that the best time to deal with Ferns is while the young fronds are still snugly ensconced in the growing centres well out of the way of damage, while the long winter rest has endowed the roots with their maximum of vigour, so that a little damage to them is soon repaired. To those who have so-called hardy Ferneries in their gardens, consisting solely of those common forms, the Male Fern, Broad Buckler Fern, Hartstongue, Lady Fern, and Ferns such as are hawked about at a penny a root by costermongers, we should say turn them out, at any rate from prominent situations, and replace them by a collection of the infinitely more beautiful varieties which the Fern connoisseur alone cultivates. These are absolutely as hardy as the others, since they are merely variants of the same species, and good representative collections can be obtained very cheaply from dealers who trade in these plants. No one who has ever seen a collection of these forms would ever revert to the common ones, so great is their variety. For instance, the common Hartstongue has sported into several hundred distinct forms, frilled, tasselled, fringed, and so on, and surely it is more interesting to walk round a rockery in which every plant presents some fresh features than to fill that rockery for the sake of a few shillings with scores of the same kind which can be seen by the thousand in our western hedgerows. A man might as well construct a rockery and fill it with stonecrop and houseleek.

With this exordium we will now consider how to treat the Ferns as a whole. As a rule, good garden soil fits them all, but, like other plants, they have their predilections, and a good leafy or peaty compost, half loam and half leaf or peat mould will induce a Fern's growth. In rockeries, therefore, although the mound may be built up of ordinary soil, it pays to make pockets or stations for the Ferns with the compost indicated. One great point in successful culture, that is, culture in which the specimens are developed to the best advantage, is the confinement, as far as possible, to single crowns of all such Ferns as grow shuttlecock fashion with their fronds arranged in a circle as in the Buckler Ferns, Shield Ferns, and Lady Ferns. All these have a tendency in course of time to form more or less dense clumps by means of sidebuds or offsets, and in such cases it is advisable to fork up the entire plant and pull away these offsets, leaving the central one and replanting this in situ. Each of the offsets will come away with its own bunch of roots, and should be planted separately. The result will be the production of much larger individuals, and their varietal charm will come out all the more markedly, owing to their more robust growth. The other class of Ferns which, like the well-known Haresfoot Fern (Davallia canariensis), have creeping root-stocks, to which category belong our several species of Polypods, are best left undisturbed, as by their travelling nature they find fresh soil for themselves, and, given an annual mulching of leaf-mould, they thrive for years without deterioration. Ferns in pots should be overhauled and divided on the same principle. If out of condition, they should be turned out, all dead roots pulled away, and dead matter removed, and the plants reinstalled in pots just capable of accommodating them comfortably, while, if merely pot-bound, they can be dropped intact into pots a size larger, and the space carefully filled up with leafy compost as specified, damaging the roots as little as possible in the process. In doing this a good look-out should be kept for weevil grubs, wireworms, ordinary worms, or other vermin, as these are often the cause of weak growth. Ferns, though thriving in moist conditions, cannot grow well in saturated, soured soil, and in serious cases it is well to wash this out, entirely removing the dead roots, and potting in fresh soil in smaller pots. In making new rockeries or beds for Ferns, a north aspect should be chosen, involving, as far as practicable, shade from hot sun and protection from strong winds. The immediate vicinity of trees is, however, to be avoided, as top light is essential, and the tree roots, moreover, are too apt to draw upon the subsoil unduly, and thus starve the Ferns. *Chas. T. Druery, V.M.H., F.L.S.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA TRIANAE, "WILLIAM BASS."

A very beautiful form of Cattleya Trianae has been sent by Mr. Richard Nisbet, gr. to W. A. H. Bass, Esq., Byrkley, Burton-on-Trent. All the segments are broad, and especially the petals, which are three and a-half inches long and three inches wide. The sepals and petals are silvery-white, with a delicate flush of rosy-lilac colour. The broad lip is white at the base with a similar rosy-lilac tint to that of the petals, the broad frilled front being of purplish crimson with a lavender margin. From the base of the lip a broad orange-coloured line extends to the middle, where if diverges to each side. Cattleya Trianae varies considerably, but few forms are comparable to the one sent.

CATTLEYA SCHRODERÆ, &c., AT GLEBELANDS.

The beauty of this delicately-tinted and fragrant Cattleya is shown at its best in the collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), where the front staging in one of the houses is furnished with plants of it in bloom, some of the specimens having from 10 to 18 flowers. The prevailing tint is that of peach-blossom with different shades of orange on the disc of the lip. The most marked variations are C. Schroderæ alba, with pure white flowers with pale orange in the throat of the labellum; Fowler's variety, a very handsome form with large rosy-lilac tinted flowers, the disc of the lip being of a peculiar yellowish-orange tint, a line of the same colour extending down the lateral sepals; and several varieties of the same class as "Pitt's variety," with ruby-purple front to the labellum. The plants have been in the care of Mr. Davis for upwards of three years, and each year they have gained in vigour and in the number of flowers produced.

A batch of Dendrobium thyrsiflorum, each with five or six spikes; some showy Lælio-Cattleyas in bud; some good white Cattleyas, including a fine C. Mossiæ Reineckiana with seven flower-sheaths; a fine lot of Odontoglossums and other good things promise a continuance of flower. Two of the best examples of good cultivation in the collection are represented by a healthy mass of the original importation of Eulophiella Elisabethæ, sending up spikes, and a vigorous plant of Eulophiella Peetersiana.

CYPRIPEDIUM MRS. A. W. SUTTON.

Originally this pretty hybrid between C. niveum and C. Chamberlainianum was raised and flowered by A. W. Sutton, Esq., Bucklebury, Woolhampton (gr. Mr. Wright), who showed it at the Royal Horticultural Society's meeting on January 14, 1902. More recently it was raised by Sir Chas. W. Strickland, Bart., Hildenley, Malton, Yorkshire, who now sends a flower of a very fine variety. The expanded petals are three and a half inches in length, and the depth from the tip of the dorsal sepal to the point of the lip is the same. The dorsal sepal is greenish-white in the middle, white at the margin. and bears ten purple lines of varying length. The petals, which are half an inch at the widest point, are white tinted with rose-colour, and bear six dotted purple lines. Lip white, with slight rose flush and veining. Staminode white with a large green and purple blotch.

THE RESTORATION OF SICKLY ORANGE TREES.

Although at the present day but few private gardens boast of extensive collections of the genus Citrus, such small members as Mandarine, Tangierine, and Myrtle-leaved may be found as inmates in many greehouses, but, as compared with other decorative plants in vogue, they are held by their owners as of small value. Still, when they are cultivated intelligently, afforded the right kind of soil, and placed in full sunlight at all seasons of the year, the plants will blossom abundantly, and bear fruit freely. It is rarely one sees perfectly healthy specimens of these plants of a large size, a fact that is generally due to the deterioration of the soil, and to the plants being kept the whole year under glass, and thus deprived in great measure of the ameliorating influence of light and air. The large masses of soil contained in the tubs and borders become incapable of inducing healthy growth, the foliage turns pale in colour and thin in substance, and in consequence, perhaps, of an inadequate staff of workmen for such heavy operations as re-tubbing and transplanting the trees, temporary measures, which do not go to the root of the mischief, are adopted. In such cases only radical operations are of any permanent effect in restoring the health of the trees. It may be of interest to describe the method I adopted in restoring to health a large number of ancient Orange trees in a garden belonging to a nobleman in Austria. These were the sorry remnants of a collection numbering one hundred and fifty trees, mostly of edible varieties. Such an extensive collection required a special staff of workmen to attend to the needs of the trees, no small matter when the tubs in which they were grown measured 3 to 4 feet in diameter and 2½ to 3 feet high. These were the average measurements when the collection came under my charge, and had been so for many years previously. Little had been done in affording fresh soil, usually nothing beyond a surfacing annually, till a tub fell to pieces from decay. The appearance of the heads, the many dead and dying shoots, and the pale-green tint of the leaves indicated a spent and soured state of the soil. An examination more than confirmed this. I found the lower stratum of soil dark coloured, almost black, stinking, and saturated with moisture, and containing scarcely any roots and no feeding rootlets whatever, these having died long before. A new compost was mixed, crocks were collected and washed clean, and fresh, tough sods were carted in for covering the latter. Many new oaken tubs were obtained from the estate sawmills, and these were punctured with several openings at the bottom, about 1 foot apart, and usually of a square form, these being readily notched out at the edges of the boards with an axe or saw.

The conservatory, 100 yards in length and 30 feet in width, being cleared of the mixed collection of hardwood plants, an operation that lasted for about a month in May and June, the work of re-tubbing was begun. To lift such heavy mass of soil and tree as those contained in such large tubs, an oaken lever, fitted with an iron fork at the thick end so as to clasp the tree, the latter being enveloped close to the soil with a mass of soft material, in order to avoid the bruising of the bark, was brought into use, and being afforded a movable fulcrum of about 6 feet in height, it could, by means of a thick iron bolt, be fixed at any desired height, the fulcrum being first pushed up close to the tub.

The forked end of the lever being lowered to the bottom of the bole and made fast with soft cordage, half a dozen men hauled on a stout piece of rope fixed to the thin—the free end—of the 15-foot lever. By this simple machine a mass of soil weighing 1 to 2 tons was readily hoisted, and held suspended whilst the spent soil was extracted from all parts of the ball, excepting the uppermost portion where the soil was in a better state than at the lower. Having performed this portion of the work, the removal of all decayed roots was undertaken, and the rest of the ball and roots was freed from soil by means of clean water and a force pump. The next operation was re-tubbing in a receptacle just capable of holding the now much reduced ball, filling in all the spaces among the roots, consolidating the soil thus applied with blunt rammers, and not covering the old ball with new soil more than to the depth of 1 inch. The thickness of crocks and turf covering would average 6 inches, more in the case of the larger tubs and less in smaller one.

The compost employed consisted of two-thirds one to two-years-old woodland pasture turf, heath soil, partly decayed, one-third, and almost as much clean pit sand. No leafmould or nitrogenous manure, or any substance which would tend to the souring of the soil, was mixed with it, manure in liquid form being preferred when a stimulant was wanted, at the time when returning vigour in the trees seemed to indicate the need for applying it. Having finished the retubbing of the trees, they were placed on the north side of the conservatory, the glass being shaded in sunny weather with reed mats, and the trees afforded as much water as moistened the entire mass of soil in each tub, no more being applied for a month. Meantime quantities of tree leaves and stable litter were thrown into great heaps to ferment, and dissipate the ammoniacal fumes, and this having been accomplished, the Orange trees, after a moderate cutting-back of the main shoots, were taken to the reserve garden, placed about 3 feet apart on bricks standing on the gravel, and the hot-bed materials packed closely between them, and, to allow for sinking, a foot or more higher than the rims of the tubs.

Syringing of the foliage lightly night and morning was carried out till the end of the month of August, at which time the autumn dews sufficed to take its place. The heat of the sun and the bottom heat from the bed began early to tell on the growth, which, as the weeks went by, became quite satisfactory in length and tint, and the succeeding floral harvest was a good one. So many of the branches had died in recent years, leaving gaps in the general spherical form of the crowns, that two years elapsed ere these were filled with new growths. Many were the *schaden freude* (malicious) predictions of my neighbours, and the estate officials, regarding what was an unheard-of experiment in Orange culture, but which was so successful as to command, at length, their full approval of the methods pursued. I need scarcely say how delighted my employer was at the unhoped-for recovery of these fine old trees. That is now 30 years ago, and by reason of the total severance of my connection with Austrian horticulture and interests, I am unable to say anything about the present condition of these trees. *F. M.*

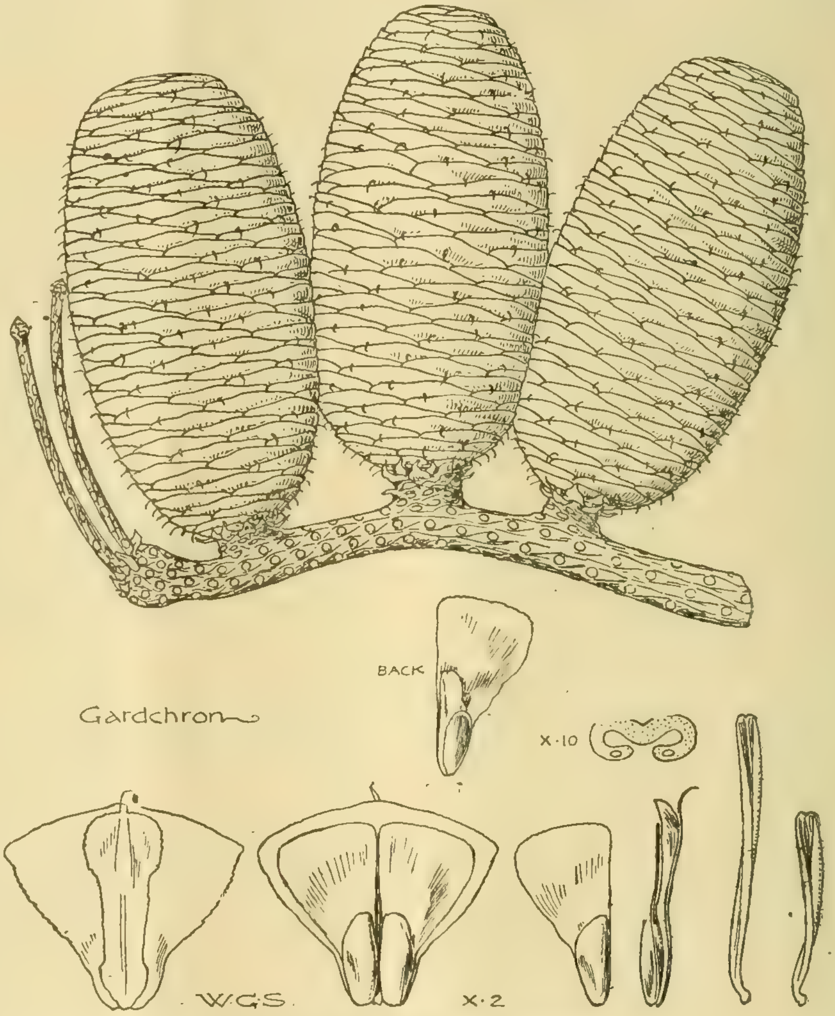

FIG. 82.—ABIES DELAVAYI, FRANCHET.

Branch denuded of leaves bearing three deep purple cones. The details show the outer surface of a cone-scale with the bract, the inner surface with two winged seeds, detached seeds, leaves showing the variation in size and the very marked rolling back of the margins.

CHINESE CONIFERS.

ABIES DELAVAYI.*

Among Mr. Wilson's specimens are two Silver firs so much alike that at first sight they might readily be confounded one with the other. The one which, after a comparison with Franchet's original types, obligingly lent for the purpose by the authorities of the Paris Museum, we find, is the A. Delavayi, is numbered 3022A, and is described by Wilson as a tree 20-50 feet in height, and as growing on Wa Shan at an altitude of 9,000-11,000 feet. Father Delavay found it at the summit of Tsang Chan at an altitude of 3,500-4,000 metres, and Faber on the summit of Omei. It is remarkable for the manner in which the leaves are rolled back at the margins, so that on transverse section they resemble the figure ∞. The resin canals are in the substance of the leaf. The cones are of a deep plum colour, cylindric, oblong truncate, 6-7 cent. long, the bracts broadly oblong, spatulate, ending abruptly in a short point or acumen which projects beyond the scale. The scales are wedge-shaped at the base, somewhat rounded, and subentire on the upper border, seeds winged.

ABIES FARGESII.*

This is, according to Mr. Wilson, the common Silver Fir of Central and Western China. It never occurs below 6,000 feet, and ascends to 11,500 feet, forming entire forests. From A. Delavayi it differs in the leaves, which are very white on the under surface, nearly flat, though sometimes rolled back on the under surface as in that species. The resin canals are sub-epidermal in the extreme corners of the leaf. The cones are deep purple in colour, as in Delavayi, but differ in form, being barrel-shaped. The bracts are also narrow, not broad at the base, spatulate, with a short acumen which does not project beyond the scales. The cone-scales are broad at the base (not wedge-shaped and the upper border is rounded [description and figure (see p. 213) from Wilson, n. 3,022]. The timber, though largely used for building purposes, is soft and of little value. It is the Lien Sha, or Pao Sha, of the Chinese. Mr. Wilson adds that it is certainly one of the handsomest of Chinese Conifers, and that he has seen specimens of it nearly 200 feet in height and 25 feet in girth. We are glad to learn that it, as well as A. Delavayi, is growing in Messrs. James Veitch & Sons' nursery at Coombe Wood. *Maxwell T. Masters.*

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* Abies Delavayi, Franchet in *Journ. de Botanique*, tom. xiii. (1899), p. 255.

* ABIES FARGESII, Franchet, in *Journ. de Botanique*, tom. xiii 1899), p. 265.

FOREIGN CORRESPONDENCE.

ACACIA PODALYRIAEFOLIA.

ONE of the finest and most ornamental Acacias introduced into our gardens is A. podalyriaefolia. It flowers in mid-winter, during the dullest days of December, and in the early spring.

It first appeared in a horticultural establishment on the Lago Maggiore about 1895-96. I received as far back as December, 1897, a flowering branch of the original plants, with a request to name it. Although I had no herbarium specimens with which to compare it, I felt certain that it was A. podalyriaefolia. It was put into commerce under various names. The owner of the original stock, Signor Motta, at Intra, first offered it in his catalogue as Acacia Motteana, and subsequently it was figured and described in the *Bulletino d'Orticoltura di Firenze* as A. celastrifolia. But, in spite of all this, the plant did not find favour. Fortunately a few plants came eventually into the hands of Herr Ludwig Winter, at Bordighera, who at once recognised the merits of this fine Acacia. He has now a hillside planted with it, and is exporting its flowers in great quantity.

The plant much resembles the old A. cultriformis, but is larger and more vigorous. The leaves are less angular, somewhat larger; and, besides, the whole plant is densely covered with fine, velvety hairs. The plant has a fine bluish hue. It is extremely floriferous; the round flower-heads are of a rich yellow colour, and have a delicate and very agreeable perfume. Mr. Winter sold or gave the plant to the Royal Botanic Gardens at Kew, and Sir William Thiselton-Dyer confirmed the correctness of my determination from the specimens in the Royal Herbarium.

This Acacia is very particular as to soil. It dislikes our calcareous earth. The only way to keep it, and many other of its congeners—for instance, the common A. dealbata—in good condition is to plant grafted specimens only. *Alwin Berger, La Mortola-Ventimiglia, Italy.*

SPRING FROSTS.

Apropos of Mr. O. Thomas's article about the protection of fruit tree blossom from spring frosts I should like to call your attention to a couple of articles in Swedish journals treating of the same subject, viz., Prof. Hägbom in *Sv. Mosskulturfören Tidskrift*, p. 112, March, 1905, and one of my own in *Tradgarden*, March, 1906, p. 41. I shall try to get copies of these sent to you, hoping you will be able to get them translated. If it were not spring and I a busy tradesman, I should have sent you a summary myself, as I have taken great interest in the problem this winter.

For some years we have had a rather considerable Government subvention for diminishing night-frosts on low-lying land by means of draining, and it is the general opinion that this money was well spent. Prof. Hägbom uses very strong arguments to show that draining off the water is of no use; what is wanted is the draining off of the cold air, and of preventing radiation by smoke or mist. My article deals with the problem in this light, and from the gardener's standpoint. I am sure that much more could be done by air drainage than is done at present, be it natural, by digging, or cutting through hedges or plantations, or by artificial pumping or heating of the descending cold air; the height of this is often only a few feet, the required heat or force is next to nothing; but the idea is new, at least as to drainage and taking advantage of the descending power of cold air, and it will take some time before engineering science will give us pumps, mills, and stoves for this purpose; but I suppose an appeal in England would be of more effect than the one I have made here

Of course, all this relates to frost during *still clear nights*; to do anything when the wind is blowing (as Mr. Thomas speaks about) is out of the question altogether, but it is very seldom we have frosts then, in this country, at least. *M. P. Andersen, Jönköping, Sweden.*

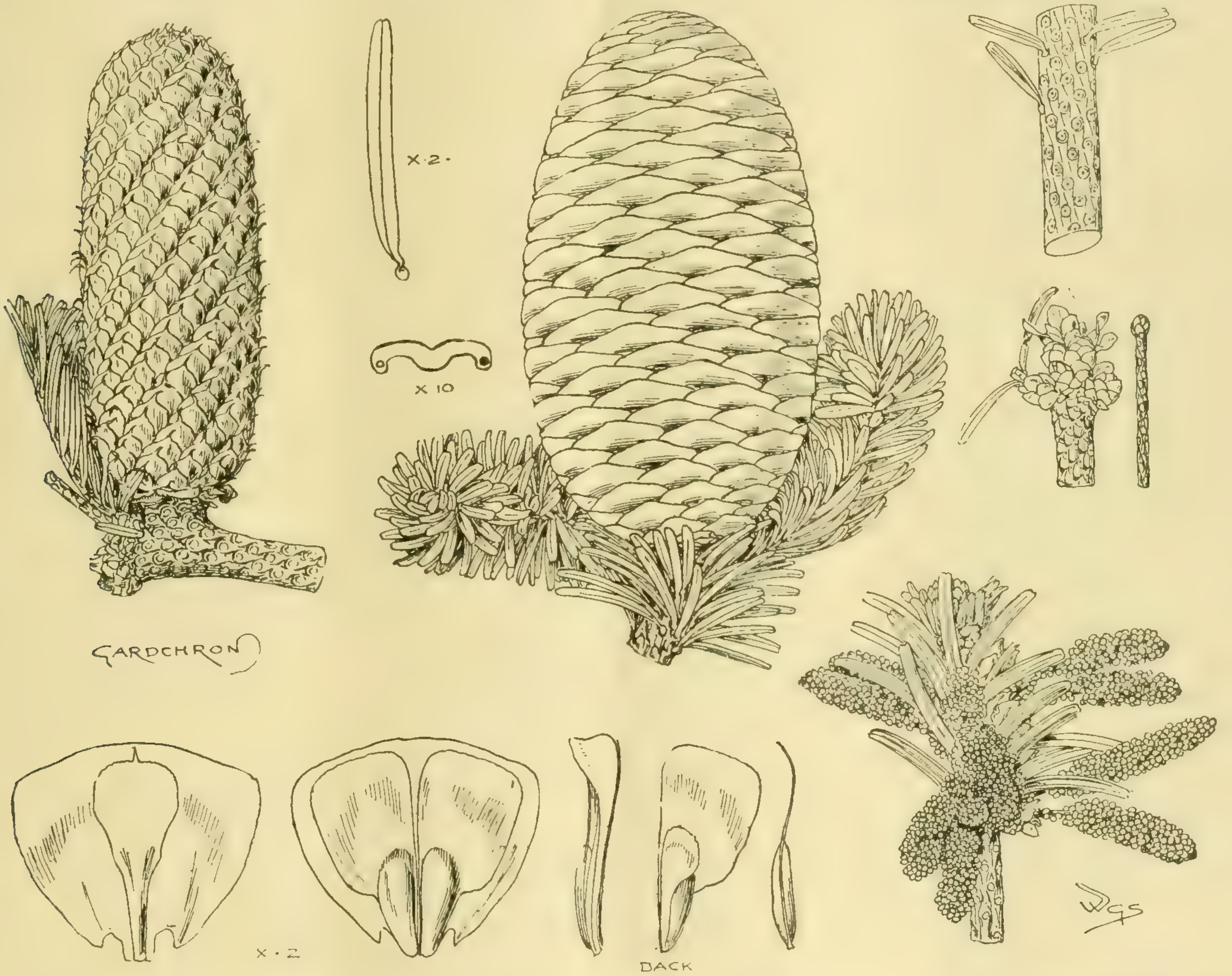

FIG. 83.—ABIES FARGESII, FRANCHET.

To the left, a young cone, a leaf and leaf section, both magnified; in the centre, a branch with a deep purple cone; to the right, portions of branches showing the leaf-scars and bud-scales; at the bottom to the left, outer surface of cone-scale with bract, inner surface of scale with winged seeds, detached seeds; and, to the extreme right, cluster of male flowers.

FORESTRY.

CLIMATE AND TREE GROWTH.

WHILE mentioning Bicton and Dropmore, and seeing that Mr. Forbes, and perhaps some other readers of my article, have been led to the view that I had in my mind only a mild climate in England, I withdraw these two names, as I only wanted to point out in a general way the great difference between the English and the German climate; so I state that you will never find, anywhere, especially in North Germany, Taxodium sempervirens, Araucaria imbricata, Cedrus Deodara, &c., although you will find them in sheltered or unsheltered positions in the south, north, west and even in the east of England, but *never* in North Germany.

I have read again my articles on the Locust tree, and I ask Mr. Forbes where I said that the Locust tree was superior to the British Oak for forest-planting? I merely stated, according to a report of a Royal Inspector of coal-mines, that the pit-props made of Locust lasted longer than those of the Oak for carpenters' work in a coal-mine. I never said a word in the general way that Mr. Forbes assumes. Cobbett, in estimating the value of the Locust long ago very highly, is supported now-a-days by a scientific man (see *Gardeners' Chronicle*, December 23, 1905), and by others (December 2, 1905). Mr. Forbes asks me where I made my studies of tree-growth in Britain, and he seems not to think much of them? I think anybody who has been for the last thirty years a very interested member of the Royal Scottish Arboricultural Society ought to know something about tree-growth in Britain. And as to the scientific side of the question, I may say that a long time has elapsed since I was, on several occasions, at Kew, when my valuable friend, Sir Joseph D. Hooker, formed his new arboretum, and I had the honour to send a good many species from my collections to complete it. But I have been not only in this southern part of England, for I have also seen and studied the trees at Scone Palace (McCorquodale), at Dunkeld (McLaren), and last, not least, at Murthly Castle, Perthshire, the grandest place for exotic Conifers I have ever seen. *John Booth, Corresponding Member of the Royal Horticultural Society, Berlin, March 26, 1905.*

THE ALPINE GARDEN.

GEUM EWENI.

This bright and pretty Avens is among the most constant blooming plants in my garden. In a sunny position it opened a few flowers even through the greater part of December, January, and February, and just when a spell of very hard frost came in about March 9 or 10, it was coming into what one may call free bloom. I have had it in my possession since March, 1903, and its free flowering at the present time is a sign that it has not at least deteriorated in constitution since that time. I understand that it is said to be a hybrid between G. Heldreichi and G. miniatum, but to me it looks practically a semi-double form of G. Heldreichi, not quite so deep in colour as G. Heldreichi superbum, but still of a fine bright shade of orange-scarlet, always a welcome colour in the garden, but especially acceptable in winter and early spring. It is perfectly hardy, and forms a capital border plant, or it may be cultivated on the lower terraces of large rock-work. In summer its stems are from a foot to a foot and a half high, but the winter flowers are produced on very short stems. It is cultivated here in ordinary loam on a sunny border, which faces to the south-west. *S. Arnott, Sunnymead, Dumfries.*

PLANT NOTES.

BROWALLIA SPECIOSA MAJOR.

This Browallia has decided attractions over its congeners, chiefly on account of its more robust habit, and its larger blue flowers which are produced in great profusion. When massed by themselves, and upon different planes to form a bank in the greenhouse, the whole presenting one mass of violet-blue flowers, amidst a setting of deep green, shining foliage, the effect is excellent indeed.

The cultural requirements are of the most simple character, and cuttings inserted in March form roots readily. The plants are also easily raised from seeds, a method of propagation I prefer, as the seedlings grow with greater freedom and are not so addicted to flower during their early period of growth as those raised from cuttings. It is essential, whichever method of propagation be followed, to pinch the tips of the young growths several times during the plant's development in order to promote a bushy, instead of a scandent growth.

After judiciously hardening the plants, they should be finally potted into 5 or 6-inch pots, using ordinary but fairly rich soil of sufficient porosity to permit free percolation of water. A cold frame will suit their requirements throughout the summer months. Copious syringings of clear water should be afforded in order to keep down red spider, to which pest the plants are very liable. Applications of diluted soot water and of farmyard liquid manure afforded with discretion are of great benefit, and are conducive to healthy growth. During September the plants should be given a favourable position in the greenhouse. They are useful for decorative work alike in the drawing-room or in the conservatory, where they will remain for a considerable time in good condition in common with other plants of their class. When used for decorative purposes, and in circumstances which do not permit of their being changed for a lengthened period, they may become somewhat thin and leggy through loss of foliage. However, they soon recover if placed in a warm atmosphere, but the growths should be shortened a few inches, and by the following spring they will again form useful and serviceable plants. *F. W. Gooch.*

COLONIAL NOTE.

NICOTIANA SANDERÆ IN PORT ELIZABETH.

Following the interesting note on this plant as grown in Canada, which appeared in the issue of the *Gardeners' Chronicle* for January 3, I may say that it is much appreciated also in Cape Colony. During the heat of the day, no matter whether the atmosphere is moist or dry, the flowers invariably close and droop, and the whole plant seems to be very sad, but as evening draws near the plants rapidly recover and make a display unequalled for vivid colouring by any other plant of like proportions, and again in the early morning the plant is at its best. The early morning and evening hours are pleasantest during the summer-time, and then it is we desire the beauty of the garden in full; and in N. Sanderæ we are not disappointed. I prefer to have the plant dotted about the flower borders, giving the brilliant colouring a chance to mingle and contrast with that of other subjects. The plant rapidly recovers itself after the heat of the day, which of late has been between 90° and 100° in the shade. It withstands drought admirably, and it is almost unharmed by the severest gale of wind. *Harry Rabjohn, gr. to J. A. Chabaud, Esq., March 5.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Calanthes.—Some varieties of the C. Regnieri section as C. Stevensi, C. Sanderiana, C. Turnerii, C. T. nivalis, &c., are now in bloom, but very soon after they have done flowering the plants will recommence to grow, when they may be repotted as advised in my last Calendar for the C. vestita group. All plants of the deciduous Calanthes that are bearing seed pods should be stood in a sunny position to mature and ripen the seed. When these seed vessels are ripe and appear to be bursting, let a piece of tissue paper be wrapped loosely around them, tied firmly at the base to prevent loss of seed. Allow the pods to remain until the old flower stems commence to die down. By that time some of the plants that were potted first will have made a considerable number of roots, and the seed should be sown on the best rooted plants. If more convenient, 4-inch pots may be used for the purpose instead, filling them to within 1 inch of the rim with crocks and packing about ½-inch deep of Calanthe compost firmly on the surface. After the seed is sown very great care in watering will be necessary; that sown on the potted plants should be sprayed over whenever the surface of the compost appears in the least dry, but the seed sown in special small pots can be best moistened by dipping the pots in water, about once a week, up to the surface of the crocks. When the seedlings appear, let them be afforded all the care possible, but do not disturb them until the following spring. Last year's seedlings may be potted off at the present time. Place five or six of them around the edge of 3-inch pots, using similar material to that employed for the older plants. Suspend them in a rather shady position, but well up to the roof glass of the house.

Habenarias.—Habenaria pusilla (militaris), H. carnea, H. c. nivosa, and H. Susannæ are now starting to grow, and the tubers should be turned out of their pots, carefully removing all the old soil. Repot the tubers singly in long thumb pots. Place a few crocks at the bottom of each pot, and rest the base of the tuber upon these; the top of the bulb will then be just below the rim. Fill up around the tuber with clean crocks to within 1 inch or 1½ inches of the rim over the crocks, place a little dry sphagnum-moss, and fill the remaining space with the following compost, just covering the top of the tuber so that the point of the new growth will peep through the surface of the soil:—One-half fibrous peat and loam and the other half finely-chopped sphagnum-moss, adding some finely broken crocks, and a little coarse silver sand, the whole being well mixed together. After these Habenarias have been repotted place them in a moist atmosphere on the shady side of the warmest house, and let them be within a foot of the roof glass, for if placed low down upon the ordinary stage away from the glass, the stems would become drawn and the flower spikes weak. Spray the plants lightly overhead whenever the compost appears to be dry, but later, when in full growth, they will require an abundance of water. Shade them from direct sunshine all through the growing period, and well syringe the under sides of the leaves. Our plants of H. rhodocheila have just passed out of bloom, and the foliage is gradually decaying. The plants have been removed from the warm house and are now in a moderately dry atmosphere of intermediate temperature, and are well exposed to the sun. Limited quantities of water should be afforded the plants until the stem and foliage disappear, after which time the soil should be moderately sprinkled over about once a week to keep the tubers in a plump condition while they are dormant.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Potting.—In potting stove and greenhouse plants, forethought and study must be brought to bear on the subject. If the plant to be potted is but just rooted, it is essential that its requirements be as carefully considered as though it were a specimen plant. Failures in successful plant-growing are often traceable to imperfect drainage. In the culture of hard-wooded stove and greenhouse plants, one of the principal aids to success is firm potting. The result of careless or loose potting, especially with stove or greenhouse climbers, is that the roots become long and fibreless, and instead of the plant developing short, firm, consolidated growth, a lot of useless elongated shoots result, which never become sufficiently ripened to produce satisfactory crops of flowers. Close-matted, fibrous roots are produced only in firm soil. Heaths, Azaleas, Ixoras, Codiæums (Crotons), and other hard-wooded plants all require firm potting, and this also enables the plants to be kept in a healthy condition in much smaller pots for a greater length of time than when potted loosely.

Rose House.—Established Rose trees in borders will now be growing freely. A good soaking of tepid manure water will be found beneficial to the plants. Syringe freely with clear water once or twice daily, according to the conditions of the outside atmosphere. A slight fumigation once a week will keep down attacks of greenfly. Plants growing in pots should also be assisted with liquid manure. A fresh batch of Roses should be brought in to heat to furnish a succession, and Roses will be found useful now that forced plants generally are passing out of flower. The night temperature should be 45° to 50°, with a proportionate rise by day, giving ventilation on all favourable occasions, but avoiding cold draughts.

General Remarks.—Pay timely attention to the matter of stopping Chrysanthemums. The growths of Salvia splendens grandiflora should be pinched from now onward to the end of July, to secure strong, bushy plants. Marguerites should be carefully watched for the leaf-mining grub; fumigation with XL-compound or an occasional spraying with some liquid insecticide proves an excellent remedy against this troublesome pest. Herbaceous Calceolarias and large-flowered varieties of Pelargoniums should receive alternate applications of weak manure water and soot water once or twice each week. Stake these plants as may be necessary, but do not use more supports than are really essential.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt. Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Cherries.—There is not very much difference between the requirements of trees in pots and of those growing in borders. The atmospheric temperature at night must still be maintained as low as 50 deg. by artificial heat until the stoning period is passed. The heat generated during the day by sunshine may also be reduced by affording ample ventilation whenever the condition of the weather will permit of this being done. Open the ventilators very early in the day, and close them late in the afternoon. Syringe the trees twice each day in fine weather. On the first appearance of Aphis, let some approved insecticide be applied or fumigate the house with the XL-All Vaporiser. When the fruit commences to swell again after the formation of the "stones," pinch the young shoots at the second or third leaf, except such as will be required for bearing next season, and for the extension of the trees. Afford water freely to the roots whenever this is necessary, substituting occasionally for the clear water some diluted liquid manure.

Thinning Grapes.—Vines in the earlier houses will now claim attention, in respect to the thinning of the fruits. Different varieties will need to be treated with due consideration for their peculiar characteristics. Those that "set" freely may be taken in hand at once, but such varieties as Muscat of Alexandria, Muscat Hambro, Alnwick Seedling, and others may be allowed to wait a little longer time before thinning takes place. To obtain a properly shaped bunch of grapes, thinning out should be commenced at the bottom of the bunch, and continued upwards, leaving the centre of the bunch well open so as to admit air and light. The "shoulders" of the bunch should not be thinned very severely or they will become loose, and suffer in effect when offered for dessert. The pollination of shy setting varieties may be assisted by drawing the palm of the hand down each bunch daily, and if Black Hamburghs are in bloom at the same time, it will be wise to transfer some of the pollen from them to those that usually produce less pollen. Continue to obtain a free circulation of air, and maintain considerable atmospheric moisture on bright days.

Mid-season Vines.—These are making good progress towards the flowering stage, and it can be seen at a glance which bunches are going to take the lead. Those which are placed the best should be retained, and the others cut away. All stopping should be done in advance of the flowering period. Weakly vines should be allowed to make a little more lateral growth than others, and must only be cropped lightly.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

A Border of Pink Flowers.—A very charming effect can be obtained where means are at one's disposal, by devoting borders to one particular colour of flower. For instance, in gardens where there are numerous borders, one might easily be reserved for flowers of pink and rose shades, another for blue shades, while another might be filled entirely with white flowers, which would conduce to a desirable change from the usual mixed borders in vogue. For borders of this description hardy and half-hardy annuals could be largely used. A border 150 feet in length and 25 feet in width, or thereabout, devoted to pink and rose shades, could be very effectively arranged by alternating circular clumps 18 inches or 2 feet in diameter, planted as follows:—At the extreme back, to give height to the border, tall standards of Dorothy Perkins Rose, Lady Gay Rose trained on stakes, pink varieties of tall growing Sweet Peas, and the rose-coloured variety of Cosmos. Next, in front of these, 4 to 5 feet standards of Caroline Testout Rose, Lavatera rosea splendens, and pink Scabious. In front of these Pinks, Phlox decussata, tall carmine-pink Antirrhinum, and Nicotiana Sanderæ. In front of these again dwarf-growing pink Antirrhinum, Clarkia double "Salmon Queen," and pink Pentstemons. In front of the latter rose-coloured East Lothian Stock, Dianthus "Salmon Queen," and Godetia Lady Satin Rose. Then, in the immediate front, Eschscholtzia compacta intus rosea, pink Phlox Drummondi, Verbena Miss Willmott, Petunia Rosy Morn, and Godetia Rosamund.

A Border of Blue Flowers.—If the border is situated in a sunny position, the effect is enhanced, as this colour is seen at its best in a strong light. As a contradistinction to the border described above, this might be arranged devoid of any formal or set design. Throughout the whole length place supports of sticks—some cone-shaped, others upright, and some almost recumbent—around which plant blue varieties of Sweet Peas, blue Convolvulus, and Ipomæa rubro-cœrulea. Then, again, place informal groups in various sizes and shapes of Delphiniums, especially the blue hybrid ones, that grow 5 feet to 6 feet in height, and the small one, "Queen of the Blues," which grows only to the height of 18 inches or 2 feet, but possesses an exquisite blue colour. Anchusa italica, a very showy perennial, but which, if sown early, flowers the same year, is another valuable plant suitable for such a border. Groups of blue Campanulas—particularly C. pyramidalis, Anagallis Phillipsii, Catananche cœrulea, Commelina cœlestis—these two, though perennials, flower the first year if sown now in heat—Lobelia, Phacelia, Nemophila insignis, blue Swan River Daisy (Brachycome iberidifolia), blue Verbena, Love-in-the-Mist, Lupines, Cornflower, Heliotrope, etc., are all adapted for this border. If, in addition to these, perennial plants such as Globe Artichokes, Echinops, Eryngiums, Veronica, and Platycodon are used, and care is taken to blend the different shades harmoniously, the effect will afford much pleasure.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

The Pear Midge (Diplosis pyrivora).—This pest, which of late years has caused much damage in gardens, will soon be on the move. Spray the trees just before the blossom appears with petroleum emulsion, which will destroy many of the pests while in the larva state. The perfect midge appears during April from eggs laid by the fly when the trees are in flower, the eggs being deposited in the flower itself. The fly, which is very small—being only one-tenth of an inch long—is busy laying eggs for a month from about the middle of April to the middle of May, but varying, of course, according to the locality. The females lay their eggs in both the unopened and opened flowers, piercing the petals, and depositing their eggs on the anthers. In a few weeks after the attack, the fruits will swell rapidly, and then suddenly drop from the tree. The flies are in evidence on sunny evenings. As an additional remedy and partial preventive dress the ground under the trees with a good sprinkling of kainit. Trees chiefly attacked are the early varieties, and I notice the insects have a particular liking for the varieties, Doyenné Boussoch, Williams' Bon Chretien, Jargonelle, and Marie Louise. I have sprayed the trees when in bloom with weak petroleum emulsion, and no damage has resulted to the blossoms.

Cherries.—During severe weather, very early flowering varieties of these trees should be given a slight protection from frost. Sprays of Heather or bracken Fern can easily be placed over the trees at night time and removed in the morning, and it is surprising what a number of trees can, in a short time, be thus protected. Vigilance should be the watchword of the fruit grower during April and May.

Red Currants, etc.—To combat attacks of the currant-moth, spray the bushes with petroleum emulsion before the leaves fully develop. This will be found to prevent an immediate attack, as these moths begin to feed and commence boring early in April, or as soon as genial weather obtains.

Gooseberry bushes should be sprayed with a strong solution of quassia extract, taking care that every particle of the bush is reached. This should be done several times. If an attack of Gooseberry mildew is feared, or if the bushes have previously been attacked by the fungus, apply a dressing of potassium sulphide at the rate of 8oz. to 20 gallons of water. This should be applied just as the buds are expanding, but should not be used after the fruit is set. Another sprinkling of lime will be beneficial to the trees and ground.

Fruit Room.—Examine the stores of Apples and Pears frequently, and remove all decaying fruits. Late varieties of Apples should be moved as little as possible, but when shifting does become necessary, replace them on some soft wood-wool, or a cool base that is free from damp.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Transplanting young plants.—In order to obtain the very best plants of Cabbages, Cauliflowers, Savoys, Kales, &c., no system I have tried can compare with that of transplanting from the seed-bed on to a spare piece of ground. In gardens where slugs are troublesome or where the soil is heavy and quickly "bakes," in the sun, the plants have a far greater chance of becoming established when so treated, especially if the weather is hot, and, in addition, they mature more quickly. Plants allowed to become leggy and drawn in the seed-bed never give the best results, and the extra labour entailed in transplanting is more than repaid. The time is fast approaching when this work should be taken in hand, and I would advise all young gardeners to adopt the practice, old though it be.

Potatos.—Endeavour to sow the sets for the main crop without delay, but choose a dry time for the purpose, so that the soil will be left as loose as possible around the seed tubers. Wood ashes from the rubbish-heap fire should be incorporated with the soil, for, in addition to furnishing plant food, they improve the quality of the crop. Avoid using rank manures at this season of the year; rather wait and apply a dressing of nitrate of soda just before earthing up the plants. Plenty of room both between the sets and in the lines should be given, and if a few special specimens are wanted for exhibition purposes, select strong, well-sprouted tubers and plant them in well-rotted leaf mould, with some fine sand added to ensure a clean appearance of the skins.

Onions.—Plants intended for making large specimens should be gradually hardened off in frames, with a view to their being finally planted about the middle of the present month. Syringe the plants in the afternoons when the weather is fine, and slightly stir the surface of the soil in which they are growing, for this may have become almost impervious to air from the frequent syringings and waterings. Young gardeners wishing to excel in the growth of these, as with all vegetables, must give constant attention to details and not trust to any haphazard methods. There is still time to sow Onions in the open ground if the main crop is not already in, and now that we may expect April showers, the seeds will soon germinate and produce strong seedlings.

Lettuce.—Seedlings from the early sowing in frames will now be large enough to transplant in the open border. Plant in lines 15 inches apart, leaving sufficient room between the plants for their proper development, always remembering that some varieties require much greater space than others. Water the plants at the time of transplanting if the weather is dry, and protect them with interlacings of black cotton from birds, which at this season are most troublesome. Plants raised from early sown seeds grown on hot-beds will now be fit to cut. Plenty of water should be given the plants to ensure tenderness. Continue transplanting in frames in order to maintain a regular supply, taking care to remove the sashes during hot sunshine. There has been very little of the latter in this locality during March.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	April 10	Devon Daffodil and Spring Fl. Show at Plymouth (2 days).
THURSDAY,	April 12	British Gard. Assoc. meet. at Altrincham.
FRIDAY,	April 13	Good Friday.
SATURDAY,	April 14	Ann. meet. Dutch Gardeners' Society, at Richmond, Surrey.

Average Temperature for the ensuing week, deduced from observations of Forty three Years at Chiswick—47·5°.

Actual Temperatures:—

London.—*Wednesday, April* 4 (6 p.m.): Max. 57°; Min. 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April* 5 (10 a.m.): Bar., 29.9; Temp., 56°; *Weather*—Bright sunshine.

Provinces. *Wednesday, April* 4 (6 p.m.): Max. 52° England S.E.; Min. 45° England S.E.

SALES.

MONDAY—

Herbaceous and other plants, Roses, Azaleas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

TUESDAY—

Japanese Lilies, dwarf trees and porcelain pots for same, Bamboo Canes, Gladiolus and other bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

WEDNESDAY—

Plants and bulbs, Lilies, Gladiolus, &c., at 12; 2,500 Roses at 1 and 3, Palms Azaleas, &c., at 67 & 68 Cheapside E.C., by Protheroe & Morris.

Orchid-Hybrids. Messrs. Sander & Sons, of St. Albans, have issued a "complete, up-to-date list" of hybrid Orchids containing the names and indicating the known or presumed parentage of all known kinds. They have done their best to secure accuracy and verify all the records, but it is obvious that in some cases the records, if they exist at all, are inaccurate or incomplete. The defect of the work is that no statement is given where the record is made and no information is given as to who was the recorder, or as to where the alleged hybrid was raised. The book is interleaved so that students can enter these particulars when they are able to find them, and can also add the names of the hybrids or crosses raised since the publication of the volume.

We have to deal with what is put before us rather than with that which is omitted. We may, therefore, say that the list will be of very great assistance and value, and that to have added the information alluded to would have greatly enhanced the labours of the compilers, increased the size of the book, and inevitably delayed its publication. The hybrids mentioned are arranged in three separate tables. In the first the genera are arranged alphabetically, and under each genus is given first the name of the hybrid, then that of the seed-parent, and thirdly that of the pollen-parent. In the second table the arrangement is different. First comes the name of the seed-parent, then that of the pollen-parent, and afterwards the name of the "product." The third table contains the same names arranged alphabetically under the genera as before, but the pollen-parent is put first, then the seed-parent, and lastly the product. The names of the hybrids are thus arranged in three different ways, so that research will be greatly facilitated. The book appears appropriately enough just before the Hybridisation Conference, and will probably give rise to interesting comment. For instance, under Anœctochilus we have crosses between the genera or alleged genera Haemaria, Dossinia, and Macodes. We do not stop now to investigate this result. We merely indicate it as furnishing a subject for discussion as to the limitations of genera. Then we come to Brasso-Cattleya, which is intelligible enough, but what are we to say to Brasso-Catlaelia?

It is evident that the question of the most appropriate system of nomenclature must be raised before the present system breaks down by its own weight. We are not fond of popular or vernacular names as a rule, because they present such pitfalls for the unwary, but in the case of these artificially made hybrids, fanciful names such as are given to florists' flowers would surely be preferable. The pedigree should, of course, always be recorded for reference, but the endeavour to incorporate it with the name is a clumsy and confusing device.

To show the extent to which hybridisation or cross-breeding is now carried, we may say that about 277 hybrid varieties of Cattleya alone are enumerated. Of Cypripedium the numbers are so large that we cannot readily count them, but as upwards of twenty pages in double column are devoted to them, and there are between 70 and 80 varieties mentioned on each page, there must be not fewer than about 1,540 named varieties. Six or seven pages are required for the enumeration of the varieties of Lælio-Cattleya. On the contrary, only a single hybrid Stanhopea or Saccolabium is mentioned, and many other genera have as yet received but little attention from the hybridist. The material at the disposal of the scientific botanist is, however, very extensive, so that this list, primarily intended for cultivators, will greatly facilitate the labours of the students of cross-breeding and heredity, and be most valuable to those who are endeavouring to unravel the so-called Mendelian laws and apply them to practical purposes.

Our Supplementary Illustration.—**Macodes javanica** is one of the best of the ornamental leaved Orchids that used to be known as Anœctochili. It is also one of several that have always grown well at Kew, the others being M. petola, Dossinia marmorata, Goodyera Rollisonii, and Hæmaria Dawsoniana. There are good examples of these at Kew now. They are grown under large bell-glasses in the tropical Orchid house in a compost of sphagnum-moss, peat fibre, and oak leaves. Macodes javanica has creeping or sub-erect stems as thick as a swan's quill, which grow to a height of about 6 inches, and are coloured rosy red. The leaves measure 3 inches by 2 inches, the upper surface coloured dark velvety green, with pale green parallel nerves and white reticulating lines, the under surface being of reddish colour. The flowers also are attractive. They are borne on erect scapes 8 inches long, and may be likened to a Goodyera, each flower being half an inch across and coloured bright orange red, tipped with white. The plant is a native of Java.

Royal Horticultural Society.—We are requested to announce that a copy of the fifth edition of Dr. Hogg's Fruit Manual (published in 1884) is wanted for the Royal Horticultural Society's Students' Library at Wisley. Will any reader who has a copy to spare kindly communicate with the Secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W.?

Botanical Magazine.—The April number contains coloured figures and descriptions of the following plants:—

Nepenthes Phyllamphora, *Willdenow*, tab. 8,067.—This is the species properly so called, the one illustrated in *Bot. Mag.*, t. 2,629 and t. 2,798 being more correctly called N. khasyana. N. Phyllamphora, according to Hemsley, differs from all known species in having the margins of the leaves ciliolate, or even minutely toothed. It was the first species of the genus to be cultivated at Kew as long ago as 1789. It is widely distributed over Eastern tropical Asia and Western Polynesia.

Gladiolus carmineus, *C. H. Wright*, tab. 8,068.—A South African species with rosy pink flowers, two of the inner segments have at the base a paler blotch surrounded by a darker border. *Kew.*

Ligustrum strongylophyllum, *Hemsley*, tab. 8,069.—A Chinese species discovered by Dr. Henry, and also found by Wilson on the cliffs west of Ichanq and westward as far as Mount Omei in Tze Chuan. It is a hardy or half-hardy evergreen shrub with shortly stalked, ovate, acute, coriaceous leaves and terminal pyramidal many-flowered panicles; flowers individually small, white. It was introduced by Wilson to the Veitchian nurseries.

Cypripedium tibeticum, *King.*—Introduced from the neighbourhood of Ta-tien-lu by E. H. Wilson to the Veitchian nurseries. It is allied to C. macranthum swarz, *Bot. Mag.*, t. 2,938, but differs in colour and shape of the staminode. It is a handsome species with flowers 4 inches across, the segments are oblong, sharply pointed, with numerous red veins on a yellowish ground; lip bag-shaped, purplish.

Callopsis Volkensii, *Engler*, t. 8,071.—A very curious and attractive Aroid, native of German South Africa. It is a tufted herbaceous plant with stalked ovate, oblong, acute, bullate leaves 4-5 inches long, with two rounded lobes at the base, and a whitish margin. The white spathes are 1½ inches long, borne on a slender stalk and partially surround a yellow spadix. It is a plant that is amply deserving of cultivation, and offers possibilities to the hybridiser. *Kew.*

Small Holdings.—The Departmental Committee held a sitting on the 28th ult. Evidence was given by Mr. R. S. Balden, Dewsbury, Yorks., W.R., and Mr. W. Anker Simmons, F.S.I., Henley-on-Thames.

Betteshanger.—Mr. John Selway's retirement is announced, on March 28, from Betteshanger Gardens, the seat of Lord Northbourne, in whose service he had been for the past thirty-four years. During this long service (writes a correspondent) Mr. Selway has made many improvements in the gardens, both inside and outside. New glass-houses have been built and rockeries formed under his supervision. Mr. W. Sims, who has been for the past thirteen years gardener to Captain R. A. Vansittart, at North Cray Place, succeeds Mr. Selway at Betteshanger.

Orchid Sale.—It will be remembered that a well-known English amateur purchased in 1904 five Orchids from a Belgian firm at a high price, 30,000 francs = £1,200. The Orchids were not in flower at the time of purchase, but the transaction was carried out on the strength of some coloured illustrations which, it is alleged, purported to be correct representations. When the Orchids flowered, however, it was seen that the blooms were not so fine as those represented in the plate. The purchaser thereupon took steps before the Tribunal of Commerce of Brussels to have the contract of sale annulled. Much was said on both sides, the vendors alleging that the sale had been made in good faith, and suggesting that the plants might have been changed by the purchaser or his agents, and, on these grounds, that the contract of sale should not be set aside. The Court took the opinion of sundry experts, all well-known Belgian Orchid growers, and these gentlemen, as we learn from a Brussels paper dated March 29, gave in a long report on the day previous. The result was in favour of the plaintiff purchaser, and the sale is annulled on account of error (*pour cause d'erreurs*). The defendant vendors have, in consequence, to reimburse the purchaser the 30,000 francs, as well as a further sum of 3,000 francs for interest, etc.—"*dommages-intérêts*." As we learn that the verdict may possibly be appealed against, comment must be reserved.

The Plants of New Zealand.—Messrs. Whitcombe and Tombs, of Addle Hill, Carter Lane, E.C., announce the publication of a volume to contain short scientific descriptions of all the more important—and of many of the rarer—New Zealand plants; and also a full and popular account of all points of interest in connection with each species. The adaptations shown by the leaf to its environment and the special contrivances of the flower to ensure cross-pollination, will be especially dealt with. The economic value of the chief timber trees will be shortly considered, and Maori legends and lore with regard to the plants of the mountains and the plains will also receive attention. This is a book which should be in the hands of every teacher of Nature Study, and of all lovers of our wild flowers. The book is illustrated by reproductions from the best series of photographs yet taken of the plants of New Zealand. Judging from the specimen pages before us, this will form a useful book for those interested in the culture of New Zealand plants.

Finsbury Park.—A correspondent draws our attention to the decorative or show-house in the Finsbury Park, London, which he says is exceedingly effective at the present time. This house is about 100 feet in length, and contains Palms, Dracænas, and other species of fine foliage plants, between which are interspersed flowering trees and shrubs, cultivated in pots, grouping Narcissi, also in pots, with suitable edgings. The plants are described as being in the best condition, and the arrangement for display is of an exemplary character.

The Wild Fauna and Flora of Kew.—It is not easy to exaggerate the delights or the scientific importance of Kew. We are constantly referring to the plants that are cultivated therein, but as much interest attaches, and some would say more, to the natives of the garden from birds to earth worms or beetles. A number of the *Kew Bulletin*, lately issued, is strongly commended to the notice of naturalists. The preface, by the late Director, furnishes in itself an epitome of the history of the garden, especially of those portions which have been little disturbed by cultivation for a century and a half, if ever. Such an area is a sanctuary for birds, and other creatures—long may it remain so. Mr. Nicholson, the ex-curator, had devoted much time and attention to the detection and enumeration of the native inmates of the garden, and to assist him had enlisted the services of many specialists in various departments. Mr. Nicholson's health unfortunately prevented him from publishing an account of his researches. The appointment of Mr. Pearson to the Professorship of Botany in Cape Town caused him also to abandon the task which he took up in succession to Mr. Nicholson. Now that the ex-Director has been relieved of administrative duties, he has been enabled to carry the work to completion. Even now there are some groups of insects and other creatures that have not been catalogued, but, nevertheless, we have in the memoir before us a particularly interesting account of certain forms of life which, under the favourable conditions existent, are enabled to live on what is relatively a microscopic speck of the earth's surface. The list comprises an enumeration of the Mammals, Birds, Reptiles, Fish, Molluscs, and of many of the orders of insects, as well as of the wild plants of all descriptions. Each group has been catalogued by a specialist, who has added occasional notes, so that the book is of a particularly interesting and authoritative character. The number of Fungi enumerated by Mr. Massee is astonishing. Lichens, on the other hand, are few in number. The number of species, at any rate, of plants which have "escaped from cultivation" and established themselves as residents is not so large as the immediate proximity of a large garden would lead us to expect.

National Fruit Growers' Federation.—A meeting took place on April 2 in the Royal Horticultural Hall, Vincent Square, Westminster, when the chair was taken by Mr. F. S. W. Cornwallis. The Council considered the Draft Railway and Canals Bill as drawn up by the Joint Railway and Parliamentary Committee on which the Federation is represented by the president, secretary, and Mr. C. H. Hooper, F.S.I. Many of the clauses were discussed carefully in detail and the general scope of the Bill was cordially approved; that one, however, dealing with owners' risk rates (clause 5) was reserved for further consideration. Amongst the more important provisions of the Bill are those defining the liability of Railway Companies under Owners' Risk Rates, and giving large judicial powers to the Board of Agriculture and Trade in the settlement of claims and disputes. Another very useful clause provides for what are called "Glut Rates," which would enable Railway Companies to lower rates for a specified time when crops are unusually heavy without the hampering conditions under which they now suffer with regard to restoring the ordinary rates. The annual general meeting will be held early in May, when all members will be invited to express their views on the recommendations of the Departmental Committee on Fruit Culture, with the view of urging those which are considered of the most pressing importance on the attention of Parliament and the Board of Agriculture.

Horticultural Club for India.—The moving spirit, says *Indian Planting and Gardening*, in the present venture is Mr. S. P. Chatterji. Lord Kitchener, Commander-in-Chief in India, who is an enthusiastic amateur gardener, is among the patrons of the club, and Mr. H. Holmwood, I.C.S., is the president. There is a strong committee of directors, which includes all those interested in horticultural subjects; while Mr. Chatterji is the hon. secretary. The objects are simple: to exchange notes of cultivation for mutual information. There is to be a library, wherein all the leading horticultural and botanical journals will be placed for the benefit of members, together with a collection of suitable books for reference. The club will hold several exhibitions. By means of these exhibitions the interest in gardening will be sustained throughout the year. A suitable site has been selected at Calcutta for a local habitation, where the members will meet at any time to exchange ideas. The structure will be an ornamental one having a glazed *annexe*, in which the shows will be held. The formation of the club was to be inaugurated by a combined Flower and Orchid Show to be held at Mr. Chatterji's beautiful nursery at Narcoldanga on March 12.

Electricity as applied to Agriculture.—An experiment of the greatest interest to farmers and gardeners is now being conducted by Messrs. R. and B. Bomford, of Pitchill and Bevington, near Evesham. On several occasions, in Germany, at Durham University, and elsewhere, practical experiments have been made in the growing of crops by means of electricity, and this is what Messrs. Bomford are doing on their farm, but the experiment differs from its predecessors in some important particulars. The work is being superintended by Mr. J. E. Newman, who, in an interview with a representative of the *Evesham Journal* the other day, described what it is hoped to do and how it will be done. In the first place, 19 acres are being treated, and over this acreage high poles have been erected, and from these, at a height of 16 feet, wires are suspended. The electricity is discharged from these wires, the current being generated by a dynamo driven by a three horse-power oil engine, and being subsequently transformed to a high pressure by a means which is at present kept secret. It has been found in the earlier experiments that the discharge of the current over ground crops, such as Wheat, tends to increase the yield both of corn and straw. The causes of this do not seem very clearly understood, but the probabilities seem to point to one, though not the sole, factor being that the discharge enables the plant to absorb nitrogen directly from the air. It is somewhat curious that plants which go to increase the amount of nitrogen in the soil, such as Peas, Beans, and Clover, are adversely affected by the current under ordinary conditions. Mr. Newman pointed out that in the experiments carried out by Professor Lemström, of Helsingfors University, who was the first to test the matter, a comparatively low-tension electricity was used, and the wires were run only a short distance above the ground. Last year Mr. Newman himself conducted a series of experiments at Bitton, near Bristol, as lately mentioned in our columns, where he distributed the current over indoor Cucumbers, outdoor Strawberries, Cabbages, Peas and Beans. On the whole, the results were very encouraging. In the present tests, twelve acres are planted with Wheat, about seven with Barley, and the rest small plots of various crops. The wires are placed high above the ground so as not to interfere with steam cultivation. Asked as to what results he expected, Mr. Newman said they would be very disappointed if they did not get 25 per cent. more corn with a corresponding increase in straw; in fact, there is, as a rule, a bigger increase in the straw than in the corn. They hope, too, that the corn will be of a better quality, and that it will be as good from a milling point of view as the Canadian corn, without which millers say they cannot produce a flour from which bakers can make that purely white bread which their customers at the present time will have. If these expectations are fulfilled, the farmer's business will be revolutionised. At Bevington, it is proposed to run the plant morning and evening till the harvest. In the case of autumn-sown Wheat, had the plant been ready last autumn, they would have run it as soon as the grain was sown. The current produces earlier germination, for in an experiment tried last year, Mr. Newman found that Peas planted in the wire-covered area came through much quicker than those planted in the open, the dividing line, in fact, was very clearly marked. The time during which the plant will be run at Bevington has not been finally settled; a great deal will depend upon the weather, the duller the weather the more the plant will be run—in dry weather they will probably stop it. Mr. NEWMAN was questioned as to the applicability of the system to market gardening, and he agreed that it was of much practical interest to gardeners. In the open grounds he saw no difficulty in the way, but where there are rows of trees, of course the wiring would be more complicated. The whole question is arousing a great deal of interest in the district, and the results of the experiments are awaited with considerable anxiety. It is a quarter of a century since we chronicled the very extraordinary results obtained by the late Sir WILLIAM SIEMENS with the use of the electric light in forcing. But the matter was not taken up here, though it was both in France and in America. Hence it is with great interest that we now note the experiments carried out at Bitton and Evesham. They go to prove that we do not utilise the means at our disposal to the extent we might do, or anything like it.

DR. LIONEL BEALE.—The death of this well-known physician in his 79th year is announced. Old King's College men will remember that he was the successor of TODD and BOWMAN, and the first to establish a private chemical and physiological laboratory for the use of students. There pupils could learn for themselves what till then had only been told them by their teachers, or read in text books. It seems a small matter nowadays, but it was a great step in advance in the middle of the nineteenth century. Dr. BEALE was a prolific writer, but we doubt whether any of his books was more useful than his "How to Observe," a book which gave the most complete directions to the student as to what and how to observe in the sick-room. A book on the same plan would be useful in many a garden. Dr. BEALE was fond of gardening, and we well remember the interest with which he showed us his "garden" in Grosvenor Street. This was placed on the "leads," at different elevations—the hothouse below, the greenhouse on another floor! Afterwards, Dr. BEALE was able to carry on his hobby at Weybridge, under more propitious circumstances. Dr. BEALE was a Fellow of the Royal Horticultural Society, and was occasionally seen at the meetings.

NEW GARDEN PLANTS OF THE YEAR 1905.—Appendix iii. to the Kew Bulletin for 1906 contains an enumeration of the plants introduced into gardens during the year 1905, as compiled from numerous British and foreign publications. The value of these yearly enumerations is so great that all plant-lovers should possess themselves of a copy, particularly as the cost is only a few pence.

THE ROYAL FLORA SOCIETY.—The *Société Royale de Flore* at Brussels, which has recently been aroused from a long period of lethargy, has an interesting history, and may, in some sense, be considered the senior society of the kind in the world. According to a document before us, the Society dates back (like our own Royal Society—we do not mean Royal Horticultural Society) to the middle of the seventeenth century. The records show that it was in existence under another name before 1650. At that time, instead of receiving the name of a heathen goddess, it was placed under the protection of Saint Dorothea. In 1661 the statutes of the confraternity were drawn up, and among the members were several whose descendants are still to be found in Brussels. What the confraternity of Saint Dorothea actually did for horticulture, apart from religious observances, is not stated; but in 1822 the confraternity was re-organised and transformed into the *Société de Flore*. Such was the interest felt in Belgium in the seventeenth century that a similar society to the one that we have just mentioned was established at Bruges in 1651, and continued till the present time. It also was at first placed under the protection of Saint Dorothea. There is a legend attaching to the martyred maiden, which accounts for the association of her name with these societies. It is briefly this:—As (in the fourth century) she was being led to the place of execution, her lover urged her to recant, urging, among other reasons for not quitting this earth, the beauty of its flowers. The martyred girl replied that the flowers in Paradise far excelled in beauty those of this earth. "Then," said her lover, "when I receive flowers from Paradise I, too, will become a Christian." Scarcely was the sainted maiden dead when a boy appeared from Heaven, his arms filled with roses, which he laid at the feet of the awe-stricken lover with the words: "Theophilus, the maiden Dorothea, now in Heaven, sends you these flowers." That is the legend of the fourth century; now in the twentieth we know that the spirit, if not the letter, of the legend is so far true, that flowers are the gift of Heaven. Quite lately, as we have had occasion to record, the *Société de Flore* has, in association with the Société Royale Linneenne, organised a series of monthly meetings, like those held fortnightly by our own R.H.S. The meetings are held in the Botanic Garden, Brussels, and under the energetic and zealous direction of MM. DE WILDEMAN and GENTIL, supported by an influential committee, of which M. WAROCQUE is president, we cannot doubt that a great future is before the reconstituted Society. Among the 25 *membres d'honneur* of the Society, we find the names of the leading horticulturists, including for Great Britain and Ireland those of the following gentlemen:—Sir Trevor Lawrence, Dr. Maxwell Masters, Mr. George Nicholson, Lt.-Col. Prain, George Schneider, H. J. Veitch, and W. Watson.

MR. JAS. O'BRIEN.—It will be interesting to many of our readers to learn that our correspondent, Mr. JAMES O'BRIEN, honorary secretary of the Orchid Committee of the Royal Horticultural Society, long an overseer of the poor of the parish of Harrow-on-the-Hill, and member of the burial board, was on Monday last elected a Councillor of the Urban District, at the head of the poll of 13 candidates.

GRAPE THINNINGS.—There appears to be a marketable value in the berries of Grapes removed during the process of thinning. We recently saw a sample in a fruiterer's shop, ticketed 6d. per lb., which appears to be full value for this formerly waste product. We are aware that green Grapes in this stage will make wine, as will indeed the young growths.

SURVEYORS' INSTITUTION.—The next ordinary general meeting, being the second of the two afternoon meetings arranged for the convenience of country members, will be held in the Lecture Hall of the Institution on Monday, April 23, 1906, at 4 p.m., when a paper will be read by Mr. J. W. WILLIS BUND (Associate), entitled "The Effect of the Education Act, 1902, on Rural Districts."

THE DISTRIBUTION OF PLANTS BY THE ROYAL HORTICULTURAL SOCIETY.—One of the inducements held out to become Fellows is the privilege of selecting certain plants from a long list supplied to the Fellows. Complaints have from time to time reached us of the miserable scraps thus sent out, but a sample box now sent us by a correspondent is almost ludicrous. The box, carriage, and packing expenses amounted to 9d., but the plants themselves were much inferior to what could be purchased for the same or less money from a costermonger's barrow. When the time and labour imposed on the staff in collecting and sending out these wretched specimens are taken into consideration it becomes obvious that the Society must not only lose in public estimation but must carry on its operations in a most unremunerative manner.

Publications Received.—*The Royal Society of St. George. Annual Report and Year Book*, 1905. A society that appeals to all English patriots.—*Forty-second Annual Report of the Queensland Acclimatisation Society*, 1905. Mr. Edward Grimley, Secretary, and Mr. F. Mitchell, Overseer, report favourably upon the work done up to the end March, 1905.—*Proceedings of the Agri-Horticultural Society of Madras*, July to September, 1905. Experiments were made with Caravonica and other Cotton. The Coco de Mer, or Double Cocoanut (Lodoicea Seychellarum) germinated in the gardens, for the first time on record in Madras, and it is believed that only in two other public gardens in India is the plant to be found; namely, in the Royal Botanic Gardens, Calcutta and the State Gardens, Baroda.—The *Proceedings*, October to December, 1905, contain papers on the Rhea fibre industry, Agave fibres, and Araucaria excelsa.—*Pietermaritzburg Botanic Society*. Annual reports and balance sheet for 1905. Marked development and improvement have been achieved. Mr. Hyslop, president, is to be congratulated on a successful season.—*Bulletin of the Department of Agriculture, Jamaica*. February. Contents: Banana Soils, Hope Gardens, Grape, Fruit, and Shaddocks and Breadfruit-tree.—*Horticultural College, Swanley, Kent, Report for 1905, &c.*

NEW OR NOTEWORTHY PLANTS.

PICEA MORINDOIDES.

THE little sketch, fig. 84 is taken from a spray obligingly sent us by the Earl of Annesley. It represents the foliage of the new species of Picea, named by Mr. Rehder, Picea morindoides, from a specimen growing on the estate of M. Allard, in the neighbourhood of Angers. Dr. Henry recognised the same species as growing at Castlewellan, Co. Down. Lord Annesley tells us the seeds were received by him from Chumbi district of the Himalaya, North of Bhotan, in the year 1889.

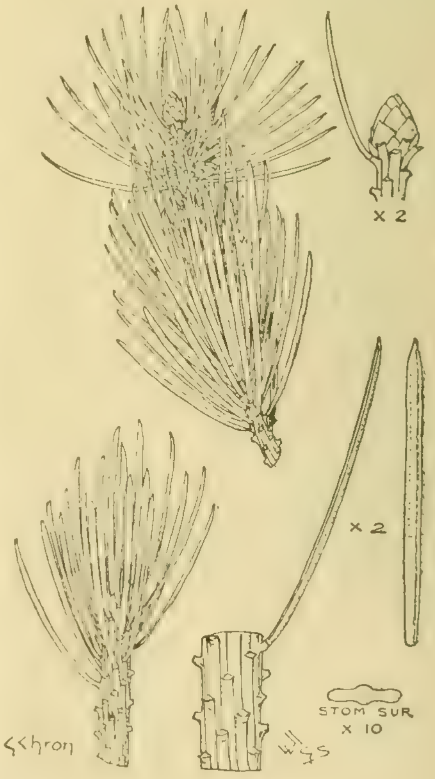

FIG 84.—PICEA MORINDOIDES, SHOWING LEAF-BUD, FOLIAGE, AND PORTION OF BRANCH. THE LEAF SECTION IS REVERSED, THE STOMATE BEARING SURFACE, "STOM SUR," BEING REALLY UPPERMOST.

It is a flat-leaved Spruce, as may be seen from the leaf-section, which is magnified ten diameters. The stomates are on the upper surface. (The drawing of the section has been inadvertently reversed.) Unlike the ordinary Spruces the leaves have palissade tissue. The resin canals are near the edge of the leaf on the upper surface. On the upper side of the branches the leaves point towards the tip of the shoot and lie in one flattish plane. The leaves are more crowded, shorter and less curved, than in P. Morinda.

It is a curious circumstance that these flat-leaved Spruces belonging to the section Omorica have now been found in North-West America (P. sitchensis), in south-eastern Europe (P. omorika), in the Himalaya (P. morindoides), in Japan and neighbouring countries (P. ajanensis), and in Western China, where Mr. Wilson has discovered P. complanata (*Gardeners' Chronicle*, March 10, p. 147, fig. 57), P. purpurea Mast. ined., as well as other undescribed species.

The height of the tree at Castlewellan is 22 feet, the spread of the branches 39 feet, the girth of the stem, at 5 feet from the ground, 18 inches. *Maxwell T. Masters.*

——Further investigation shows that this Spruce occurs, though as a rare tree, in Sikkim, Bhutan, and the Chumbi Valley, at elevations between 8,500 and 10,000 feet. Judging from the material at Kew, the other Himalayan Spruce, Picea Morinda, is not a native of Sikkim and Bhutan, but is restricted to the north-west Himalayas and Afghanistan.

Picea morindoides was first discovered by Griffith, on the Rodoli Mountain, in Bhutan, and named in 1847, Abies spinulosa,* his description in the following year being accurate and distinctive, though his specimens have been lost.

Picea morindoides being the earliest name under the correct genus, must stand; but as it is possible that some one of the newer school of nomenclature will prefer the specific name, *spinulosa*, being revived, I may as well place it on record.

Sir Joseph Hooker met with P. morindoides in 1849, in Sikkim, at Lachen, and correctly identified it with Griffith's species; but unluckily afterwards† combined it with Picea Morinda. There are also specimens at Kew, collected by Mr. H. E. Hobson, at Yatung. It is remarkable that this tree should be so rare in cultivation, as seeds have been sent at various times to Europe from the Botanical Gardens at Calcutta.

I may add that the confusion between the two Himalayan Spruces is paralleled in the Silver Firs from that region, for besides Abies Webbiana and Abies Pindrow, there are two other Himalayan Silver Firs in cultivation in Britain which are very distinct varieties if not true species.

A study of the Conifers of the Himalayas on the spot by the Indian foresters would make clear the puzzling varieties which occur in cultivation. *Augustine Henry.*

DENDROBIUM WIGANIANUM—"GATTON PARK VARIETY."

Our illustration (Fig. 85) represents a flower of this fine Dendrobium which secured both an Award of Merit and the First Diploma at the Royal Horticultural Society's meeting held on March 6. Fine varieties of D. Hildebrandi and D. nobile were used in its production, and the result is that this variety is the most perfectly-formed flower of its class. The blooms, which are of good substance, are creamy-white, tinted with rose colour, the disc of the lip being of primrose-yellow colour with some purple lines at the base.

MARKET GARDENING.

GRAPES.

In one of the best market establishments, Black Hambro is now, or has lately been, in flower, and the vines are being practically left alone so far as top culture is concerned. Everything up to the date of flowering had been done in the way of stopping, and if the points are just kept from the glass, they will be safe for tying down when the bunches have set. The Grapes will be ripe in May and June. Gros Colman and Black Alicante for August and September cutting are disbudded. Owing to rough weather in the mornings, overhead syringing is not done until nearly noon. These ten-year-old vines are being regularly cropped every year. They are grown on the double rod system, and the training wires are 1 foot from glass at the front, running up to 2 feet at angle. Canon Hall Muscat for end of July and August cutting are now practically disbudded.

Mid-season vines are now very active, and are being gently forced, to follow on. Late houses from which Grapes were only cleared in January and February have been cleansed, the borders watered, forked, and mulched. Ventilation, front and top, is left on night and day, the vines being allowed to start naturally, after which a very little fire is used. *S. Stephen Castle, March 24.*

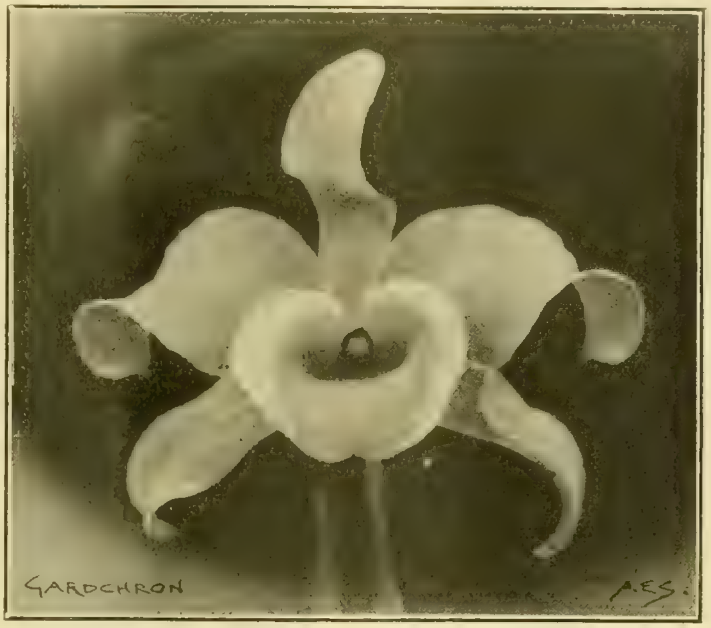

Fig. 85.—Dendrobium wiganianum—"Gatton Park variety."

LAW NOTES.

SINGULAR CLAIM AGAINST A SEEDSMAN.

The Gloucester County Court judge has given a decision in a case of some importance to bird breeders and seedsmen. Towards the end of last year a breeder of canaries found that a number of his birds died. He was unable to account for this, but suspecting that the seed with which they had been fed might be at the bottom of the trouble, he had some of it analysed by the county analyst, who certified that it contained free sulphuric acid (!), and that the post-mortem appearance of the birds, as described, was consistent with poisoning by sulphuric acid. The seedsmen who supplied the seed were thereupon sued for £30 as damages, alleged to have been sustained through them or their servants having supplied defective canary seed. A good deal of evidence was called in support of the claim, including that of the county analyst, and among other things it was alleged that best Turkish seed, the kind asked for, was not supplied. For the defence, Mr. Otto Hebner, past president of the Society of Public Analysts, etc., who had analysed some of the seed similar to that said to have been supplied to plaintiff, gave evidence that he found no trace of sulphur foreign to the seed. Asked why the birds should have died except for the reason given by Mr. Embrey, witness said it often happened that birds died in flocks, pheasants in woods by thousands, and partridges continually, not from their food, but from some infectious disease.

His Honour came to the conclusion that the birds did not die from sulphuric acid poisoning, but that death was attributable to the bad seed sold by the defendants to the plaintiff, and to no other cause. He thought plaintiff was entitled to the fair value of the birds lost, and assessed their value at £18, giving judgment for plaintiff for that amount.

Notice of appeal was given.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Hardiness of Hippeastrums.—Mr. J. Douglas, on pp. 177-78, in his interesting account of the species of Hippeastrum and their hybrids, in lamenting the supposed absence of a hardier race of Hippeastrums, says:—"It would rejoice the hearts of thousands of amateurs if a hardier race of Hippeastrums could be produced suitable for cultivation in a greenhouse temperature." I am pleased to say that we have, and have had for several years past, plenty of material for the purpose. Forms of H. vittatum and H. aulicum are now being grown extensively in structures where artificial heat, sufficient only to exclude frost, is employed. An amateur with a greenhouse or a frame from which frost can be excluded can grow Hippeastrums well, provided he fulfils the necessary requirements in the matters of drainage, suitable soil, watering and firm potting. The careless use of the watering can is responsible for more dead bulbs than any other cause. When an amateur learns to administer water to the bulbs at the proper time, he can grow Hippeastrums. At Isleworth, in the gardens of A. Worsley, Esq., where a speciality of these and many other plants of Amaryllidaceæ is made, Hippeastrums are grown from the seedling to the flowering state in frames where frost is kept out. Splendid bulbs are thus grown, and some are planted out of doors at the foot of a wall facing south. The most floriferous bulb that I have ever seen was planted thus, and threw up three flowering stems in succession, the first showing on February 4, 1903. It is only fair to add that the roots had penetrated into some mortar rubble, and that hot-water pipes were near by. The plant was a form of H. vittatum. I can go even further, and add that plants subjected to a few degrees of frost afterwards flowered as though nothing had happened to them, but I do not for one moment recommend such treatment. Hippeastrum brachyandrum is not a very tractable plant for culture in pots. It is very irregular in its flowering, and when once flowered it seldom recovers from the strain. To pit this plant as a rival to Valotta purpurea is not saying much for Valotta: for they are vastly different in colour of flower, height, constitution and general effectiveness. The growing of Hippeastrums in pots, to a flowering size, is not to be recommended if there is space sufficient to plant them in the greenhouse. By the former treatment it takes three or more years to flower plants from seed, while I have flowered them in 22 months from seed by planting out the bulbs. Spent tan, as a plunging medium, is needless and expensive, and is not always convenient to obtain. *J. W. Miles, Blenheim Gardens.*

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* Griffith, *Journals*, 259 (1847); *Itin. Notes*, 145 (1848); and *Icon. Pl. Asiat.* t. 363 (1854).

† Hooker, *Fl. Brit. India*, v. 653 (1888)

Hippeastrum Hybrids.—In the *Gardeners' Chronicle* for March 24, Mr. J. Douglas stated that H. pardinum was introduced from the Andes by Messrs. James Veitch and Sons, that Mr. John Seden had crossed it (or H. Leopoldi) and produced H. Ackermani pulcherrimum (the origin of the latter, however, is not mentioned, as *two* are mentioned). Then H. Ackermanni was crossed with the pollen of H. pardinum, and from this cross three very good forms were produced, viz., Chelsoni, Brilliant, and maculatum. One of the characters of H. pardinum is a profuse spottedness, which no other that I have ever seen possesses. H. maculatum may have possessed some of it; if so, why has such a character been lost? I have not seen any such feature in the plants shown at the R.H.S. meetings, nor among the splendid collections of Messrs. Veitch and Sons and others. It is not impossible that many of the crossings with the pollen of H. pardinum were what we now call false hybrids, that is hybrids that take after the mother parent only, without a trace of the pollen parent, i.e., the pollen never amalgamated with the ovules, but merely started the ovary into growth, with the ovules as buds, so that the plants resulting from the seeds would be equivalent to offsets. Of this phenomenon I have had many experiences. A cross that I have recently obtained through the pollen of H. pardinum and a show Hippeastrum has even more spotting than its pollen parent, and in skilled hands might initiate a new section. The crossings with H. pardinum which Mr. Douglas mentions may have been called hybrids, because the pollen of H. pardinum was used in the crossings; but it does not at all follow that the so-called hybrids had any pardinum blood in them. There is a notion among enthusiastic florists that in breeding plants the flower must conform with what is called a florist's flower—a flower of a certain form—otherwise it is rejected and may be lost. In India I bred Hippeastrums with petals so narrow that they resembled certain Crinums, and others so tubular that they resembled the flower of a Solandra, and they were all very interesting, but then I was not breeding for profit. No commercial horticulturist will be bothered with anything that does not appear to have money in it. *E. Bonavia, M.D.*

Corylopsis.—In my article on this genus (*ante*, p. 19) I mentioned that the series of organs between the stamens and the ovary had been variously described as scales of the disk, glands of the nectary, and staminodes. I have since been able to examine fresh flowers of several species, and I have now no doubt about their being nectariferous or honey-secreting organs, which should therefore be termed collectively a nectary and individually scales of the nectary. They might, perhaps, with equal propriety, be termed nectariferous staminodes or collectively a nectariferous disc. Unfortunately the beauty of Corylopsis and many other early-flowering shrubs has been sadly marred by the occasional sharp frosts that we have experienced. *W. Botting Hemsley.*

Tree-planting Days.—It would be a good plan if parents and teachers would encourage the children to plant one or more fruit trees, timber trees, or flowering trees, or plant or sow vegetables or flowers (when they cannot plant trees), on St. George's Day, or about April 24, and King Edward's birthday, November 9, for planting in each year. The subjects would then form good object lessons. Gardeners might help them by reminding them to do so. *J. W. S.*

Hydrocyanic Acid Gas and its Practical Application.—I have used the gas in various ways and under various conditions, but what I have done is only a modified form of Mr. Strawson's method. The enclosed photographs illustrate the manner in which I have used the gas. My apparatus is very simple. I get two champagne bottles because they have long tapering necks, then I make rough boxes in which the bottles are placed, then two flat pieces of wood the size of an ordinary brick, 9 inches by 4½ inches, then two upright pieces. The boxes containing the bottles are fixed to the uprights to balance at an angle of about 45°. Then they are fastened down on bricks with wire—this keeps them steady; nails are fixed on the end of each box to which a long thin string is fastened, and two dishes are procured of sufficient capacity to hold the largest quantity of acid and water required. Then, if we are going to use the gas in plant houses, we require two pieces of board, ½ inch thick, to swing up in the houses immediately over the dishes, and to each of these another piece of string is fastened; this is all the apparatus required. We next mix the sulphuric acid with water in the proportion of 2½ ounces water to 1 ounce acid. The acid must be poured gently into the water. When it has cooled somewhat it can be put into the bottles, in the corks of which two V-shaped grooves must be cut to allow the acid to come gently out. The next thing we require is sodium or potassium cyanide; if we use sodium 130 per cent. we do not require as large a quantity as we should of potassium of 98 per cent. Cyanide of potassium is more easily obtained; more of it must be used to make up the proportion. I use sodium 130 per cent. We will suppose we have now our acid and water put into the bottles; the next thing to do is to put the cyanide into the dishes, then carefully take the strings of our bottles and swinging boards, put them through the keyholes of the doors, fasten the doors, then pull both strings at the same time. The swinging boards distribute the gas so that it does not reach our plants in strong volumes. Swing the boards for 10 or 15 minutes. After about 40 minutes push open the doors with a long rod, say 12 feet long, and run away as quickly as possible. After half-an-hour or more you will be able to enter the house with safety. The points to be carefully noted are to let the temperature be as low as 50°, if possible, to ensure that the leaves and the soil in pots are dry as possible. The operation is best carried out at night or on a dull day. Everything depends on the particular class of insect to be killed. As to the quantity of material to be used, the Aphis will not require as strong a dose of gas as Red Spider, therefore we must use the gas accordingly, as the proper quantity to use can only be known by experiment; and, then, as the gas will not destroy the eggs, it is better to use it somewhat weak and repeat the process, because the insects keep hatching out of the eggs. If the temperature is kept low we may use, for insects easily destroyed such as Aphis, ¾ ounce of sodium cyanide 130 per cent. up to 1¾ ounces for Red Spider, per 1,000 feet of air space. I have used this gas with good effect for the destruction of the woolly Aphis on Apple trees. The branches are tied together with ropes, then poles or boards are put up to protect the branches, the whole is then covered with a rick sheet (more airtight material would be better). When our gas generator is introduced under the sheet, for every 1 ounce of sodium cyanide I use 1½ ounces of sulphuric acid (sp. gr. 1.8), water 2½ times the quantitiy of acid, i.e., 3¾ ounces of water to 1½ ounces acid. I am quite certain that when the use of this gas is better understood it will be employed in every garden of note. "Soil Fumigation," another of Mr. Strawson's works, will be sure to come to the front for wire worms and ground grubs. To repeat, keep the temperature low, keep the leaves and the soil in pots as dry as possible; take the greatest precautions not to inhale the gas, and not to allow anyone else to do so. *J. G. Blakey, Holmwood Gardens, Redditch.*

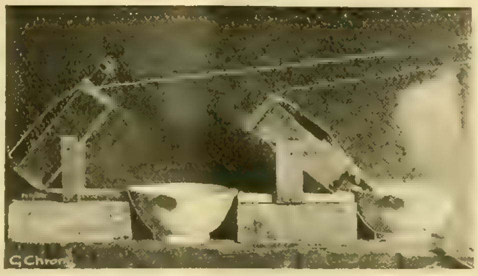

Fig. 86.—A simple apparatus for cyaniding plant houses.

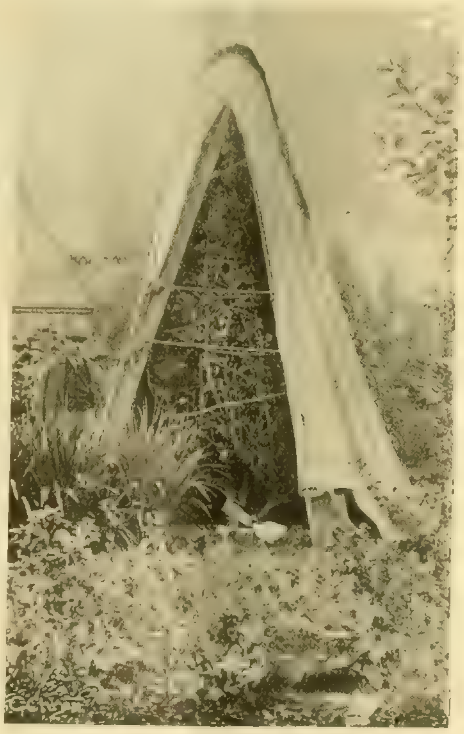

Fig. 87.—Cyaniding Apple trees for the destruction of woolly Aphis.

Natural Selection.—I am much obliged to Mr. Druery for his criticisms, as it gives me an opportunity of trying to make my position clearer by showing how he and others have mistaken it. I will take his last stricture first, as it really lies at the root of the whole matter. He quotes my oft-repeated assertion that "Natural selection has nothing to do with the *origin* of species." I maintain this unhesitatingly, because Darwin's title, "The Origin of Species by Means of Natural Selection," is misleading. What he meant may be put thus. It is the survival of the best adapted to the new conditions of life, among the offspring of some animal or plant, under the struggle for existence. On the other hand, there is supposed to be a destruction of all the individuals having "inadaptive" variations of structure or variations not capable of adapting themselves to new conditions. Adaptive variations he calls "favourable," inadaptive are designated as "injurious." But, as a matter of fact, adaptive variations arise without the presence of any inadaptive at all. That Darwin meant "inadaptive" by "injurious," and "adaptive" by "favourable," is clear from his illustration of natural selection, as a "noble and commodious edifice" being built of "accidental" fragments of stone picked up at the base of a cliff. The builder selects those which are adaptive, but rejects all which are "not fitted" to be of any use.* This process shows that the word "origin" meant nothing more than the "isolation" of a form by the destruction of its kith and kin, so that a systematist could recognise a sufficient amount of difference in it from other species of the same genus, to justify him in calling it a new species. What I have been concerned with for upwards of a quarter of a century is to discover how the changed conditions of life bring about new variations in structure in organisms; on which alone a new species is founded; or, to use Darwin's words, how their "direct action" results in new and "definite," i.e., adaptive variations of structure. I maintain, therefore, that the word "origin" should be strictly limited to this question. Mr. Druery illustrates his criticism by referring to sports in Ferns. Let a Polypody produce as many sports as you like. Mr. Druery cultivates them. There is therefore nothing "injurious" or inadaptive in their nature. In fact, he suggests some might be called "species." It matters not, provided they be constant by heredity—a *sine qua non* for a true species! But being provided somehow with sports, Mr. Druery adds: "Natural selection coming in as a factor and ousting the parental form," etc., etc.† All this may be perfectly true, but what has it got to do with the origin of the sports themselves? That is the real question. Like Darwin, Mr. Druery does not account for them. Now, Mr. Druery regards "a smaller size and a smaller area of foliage" in a seedling than those of its companions in the pan as "injurious variations." I demur to this; for what is true for seedlings must be true for adults. Thus when Ranunculus repens invades grass and the latter perishes as the former spreads, because its "area of foliage is greater" than that of blades of grass, which are smothered, then these must be "injurious" structures in the grass. To avoid this confusion, what I maintain is that in the struggle for existence one kind of plant survives under the particular circumstances, because it is better adapted for the competition. But what Mr. Druery describes as "variations" are nothing more than "individual differences" due to semi-starvation. Darwin, however, based his whole theory upon individual differences. This, I contend, was another mistake. Wallace takes the same view. He distinguishes between "specific and non-specific characters." . . . . "The latter are due to laws which determine the growth and development of the organism, and, therefore, rarely coincide exactly with the limits of a species."‡ This exactly applies to Mr. Druery's weak seedlings; remove them and they will grow all right. Mr. Druery makes another criticism, and says that "specific characters are, as a rule, present in the infant stage." They may be in Ferns; of them I can say nothing, but can Mr. Druery tell the species of any grass in the seedling stage? I do not recall a single species described in Hooker's "Students' Flora," in which details of the flowers and fruits are not given as specific characters. Moreover, I am discussing the origin of new species, not of long existing ones. I will conclude with an experiment in which "Darwinism" put in no appearance, but "direct adaptation by response" was uniform, while natural selection, metaphorically, killed off all the weaker individuals. No greater changed conditions of life (the first requirement of Darwinism) can well be found for a species than to live normally submerged, and then to live in ordinary garden soil in air. I sowed the seeds of the Walter Crowfoot, say, 200 in all. They all came up at different rates. They all developed the dissected type of submerged leaf, but with the whole anatomy changed in adaptation to air; subsequently the floating type appeared, then followed the flowers. There was not a single individual with any inadaptive structure (Darwin's "injurious variation"). The more vigorous plants from starting first smothered a good many later appearances, which perished. On transferring some of the plants to water, all the foliage perished at once, but new foliage soon appeared adapted to a submerged existence. Such is Nature's method of originating species. *George Henslow.*

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* *Origin of Species*, p. 63 (6th Ed.). Animals and Plants under Domestication, ii. p. 431.

PLANT PORTRAITS.

Asystasia bella—*Garden Album*, t. 12.

Cheiranthus alpinus—*Garden Album*, t. 9.

Cherry, Frogmore Early—*Garden Album*, t. 10.

Cypripedium Bonalli var. nigricans—*Garden Album*, March, p. 39.

Phalænopsis gloriosa—*Garden Album*, t. 11.

SOCIETIES.

ROYAL HORTICULTURAL.

April 3.—The display on Tuesday last at the Hall in Vincent Square, Westminster, was very interesting, though scarcely so large as on recent previous occasions.

The Orchid Committee recommended Awards to novelties, which included two First Class Certificates and six Awards of Merit. The Floral Committee's awards to novelties consisted of eight Awards of Merit, five of which were for varieties of Hippeastrum exhibited by Major Holford.

The Narcissus Committee recommended three Awards of Merit to seedling varieties.

The Fruit and Vegetable Committee had nothing of importance to inspect.

At the afternoon meeting there were 74 new Fellows elected, and an interesting lecture was delivered by Mrs. Scott on "The Opening of Flowers," illustrated by lantern and "animated" photograph slides.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Jas. Hudson, T. W. Turner, Jno. Green, C. R. Fielder, C. Blick, Chas. Jeffries, Chas. Dixon, Chas. E. Pearson, Chas. E. Shea, W. P. Thomson, W. Cuthbertson, E. H. Jenkins, Geo. Paul, H. J. Cutbush, Jno. Jennings, Geo. Gordon, and R. Hooper Pearson.

Messrs. W. Cutbush & Sons, Highgate, Middlesex, and Barnet, Herts., had groups of the very pretty polyantha Rose Mrs. F. W. Flight, also of a new Rose of the same type named Mrs. W. H. Cutbush, which has double flowers of moderate size and rich pink colour. Between the groups of Roses were also groups of excellently-flowered plants of such Ericas as E. persoluta alba, E. erecta, E. Wilmoreana, E. Cavendishii, Boronia heterophylla, &c. There were also Rhododendron Smithii aureum, and hybrid Verbena F. A. Bevan, having pink and fragrant flowers. Messrs. Cutbush also showed Alpine plants. We noticed Stylophorum diphyllum, a Papaveraceous plant, with flowers resembling those of Meconopsis integrifolia, but smaller, and with foliage like Chelidonium. The shade of yellow seen in the flower is deep and rich. Other interesting plants were Chrysogonum virginicum, a dwarf Composite, with small Helianthus-like flowers, Onosma alba, Anemone vernalis, and Eurybia Gunniana, a shrubby Composite resembling an Olearia. (Silver Flora Medal.)

Mr. Geo. Mount, Rose Nurseries, Canterbury, set up a charming display of Roses, which entirely filled one of the long side tables. They were staged in vases and in bamboo epergnes, the flowers being well elevated on strong growths, with splendid foliage—an index of the quality of the flowers. Mrs. John Laing, Capt. Hayward, Frau Karl Druschki, Mrs. John Laing, Ulrich Brunner, La France, and many other of the best decorative varieties were presented in a manner that can only be described as excellent. Several boxes contained other varieties in smaller quantities, but in the same first-class style. (Gold Medal.)

Messrs. F. Cant & Co., Braiswick Nurseries, Colchester, exhibited a grand lot of Rose blooms that appeared to represent a very large proportion of new varieties. Some of the more attractive included Mad. Edmee Metz, a pretty flower of pink colour, with shades of bronze; Senateur Belle, apricot colour and white; Helene Guillot, Monsieur Paul Lede, of very deep apricot colour and pink; Lady Roberts, which is now well known (in excellent condition); Prince of Bulgarie, of salmon and pink shades; Le Progrés, a prettily shaped flower of apricot and salmon shades; the brilliant red-coloured Hugh Watson, and others. (Silver Banksian Medal.)

Messrs. Paul & Son, The Old Nurseries, Cheshunt, N., had a small group of mixed subjects. Rosa berberifolia Hardii was interesting. The small yellow flowers are pleasing. A new American Rose was worthy of remark. It is a H.T. of beautiful form and of richest rose colour. Weigela præcox Fleur de Mai, Deutzia gracilis carminea, and Cytisus purpureus incarnatus are other good things shown by Messrs. Paul.

Messrs. Wm. Paul & Son, Waltham Cross, Herts., exhibited a new hybrid Tea Rose named Warrrior. The flowers are of a true rose colour and their form is commendable.

Messrs. John Waterer & Sons, Ltd., Bagshot, Surrey, showed a number of hardy hybrid Rhododendrons in flower, including the lovely Pink Pearl and Cynthia, its rival for beauty. The latter flowers are of rose-pink colour, with deeper spots on the uppermost petals; the trusses are very large. John Waterer, neat, compact heads of bright rose colour; Sappho, white, with darker posterior petals; and Mrs. Tom Agnew, similar to the last-named save that yellow replaces the chocolate markings, are also worthy of mention.

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, exhibited a collection of plants in which the fragrant Rhododendron Veitchianum was a prominent and attractive feature; also Crowea angustifolia, the greenish-yellow flowered Corydalis Wilsoni in pots, and a group of Cinerarias of the variety Antique Rose. This Cineraria has flowers of a vivid rose colour—a colour not familiar in ordinary collections of Cinerarias. The plants come true from seeds, and are also remarkable for their exceedingly dwarf habit, some of them being not more than 4 inches in height, and the tallest not exceeding 8 inches. (Silver Banksian Medal.)

Mr. A. F. Dutton, Iver, Bucks., showed Carnations more beautiful even than on previous occasions this season, a bowl of the variety Enchantress being almost perfect specimens. (Silver Gilt Flora Medal.)

Messrs. Gilbert & Son, Dyke, Bourne, Lincolnshire, had a group of Anemones similar to those displayed by them at the last meeting.

Mr. L. R. Russell, Richmond Nurseries, Richmond, showed a number of small plants of Clematis in flower, all useful for decorative purposes both in the plant houses and in the dwelling-rooms. Mrs. Geo. Jackman (white), Lady Londesborough (pale lavender, with lighter markings in the centres of the petals), Lord Gifford, Marcel Moser (large flower, with rosy-coloured nerves merging to pale rose), King Edward VII. (new), &c. Interspersed among the Clematis were forced flowering shrubs, Prunus triloba, Loropetalum chinense, Andromeda speciosa, Azaleas, Ericas, &c. (Silver Flora Medal.)

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, displayed a number of hard-wooded plants, Ericas, Cytisus, Boronias, Viburnum tinus, Polygala, Acacias, &c.; also Roses, Carnations, and Cyclamen, and a trained plant of the charming Dorothy Perkins Rose. (Silver Banksian Medal.)

Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, staged a large group of the pretty dwarf-growing Rose Madame Levavasseur and its white confrère White Pet, all excellent little plants for decorative purposes. Interspersed in the group were many handsome Ferns, including a good batch of Adiantum Farleyense. Plants of Gardenia intermedia and Hydrangea rosea also found a place in the exhibit. (Silver Flora Medal.)

Mr. A. R. Upton, Guildford Hardy Plant Nursery, Millmead, Guildford, showed a small batch of Alpine plants.

Mrs. G. F. Wilson, Heatherbank, Weybridge, showed a number of blue Primroses.

Messrs. John Peed & Son, West Norwood, London, S.E., had many pans of rock garden and Alpine plants, and a number of Daffodils in vases. Some good Pansies were noticed in this exhibit.

Messrs. J. Garraway & Co., Durdham Down Nurseries, Clifton, Bristol, staged a semi-circular group of Schizanthus—hybrids between S. Wisetonensis and S. retusus. The plants were well grown, and the flowers were of large size and of many colours, but not so bright as is sometimes seen in this very floriferous plant. (Silver Banksian Medal.)

M. Louis Gentil, Curator of the State Botanic Gardens, Brussels, Belgium, sent two interesting plants from the Congo district. The one was an ornamental Sanseveria, with brindled green foliage, and a golden margin. It is known as S. Laurentii, and promises to become a useful decorative plant. The other was Ficus Dryspondtiana, with large Anthurium-like foliage possessing a pleasing red reverse. (Botanical Certificate.)

Messrs. Sander & Sons, St. Albans, exhibited three specimen plants of Clerodendron myrmecophilum (figure in *Gardeners' Chronicle*, May 9, 1903, p. 291), and Cycas Micholitzii, first described and figured in our columns pp. 142-143, August 19, 1905.

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† I should like to know the name of any species which he has observed to have been ousted by its offspring.

‡ *Origin of Species*, p. 34. *Fortnightly Review*, March, 189[illegible], p. 444.

Mr. C. R. Fielder (gr. to Mrs. W. H. Burns, North Mymms Park, Hatfield) displayed four seedling Hippeastrums, all of which were nearly pure white, but not equal in purity of colour to "Snowdon" shown by the same raiser last season.

Major Holford, Westonbirt (gr. Mr. Chapman), displayed half-a-dozen seedling Hippeastrums (Amaryllis), descriptions of five of which will be found under Awards.

Messrs. H. Cannell & Sons, Swanley, Kent, showed flowers of Zonal Pelargoniums and others of the new Impatiens Holstii, figured in the *Gardeners' Chronicle*, p. 14, July 1, 1905. (Silver Flora Medal.)

AWARDS OF MERIT.

Cycas Micholitzii.—This species from Annam was first described by Sir William Thistleton-Dyer, and illustrated in the *Gardeners' Chronicle* for August 19, 1905. We need not again describe the species, but as the Floral Committee bestowed an Award of Merit upon the plant, we may say that it has high decorative qualities, and may be recommended for cultivation in the stove. On turning to the illustration already referred to, a good idea may be obtained of the habit of growth, but the short brown hairs and two rows of spines on the rachis are not so obvious. The hairy character and the slender form of the fronds, which are 3 feet in length, give to them an appearance akin to that of Ferns. Shown by Messrs. Sander & Sons.

Hippeastrum Agamemnon.—A scarlet flower with green, inside base, and a broad white band extending half the length of each segment, besides veining of white also.

Hippeastrum Brian Boru.—This flower is of excellent form, very great refinement, and richest crimson colour. It is the best crimson self-coloured Hippeastrum we have seen.

Hippeastrum Field Marshal.—This is also a self-coloured flower, but of less refinement, though larger in size and of a peculiar shade of colour, which may be described as a shade of orange scarlet.

Hippeastrum Marjory.—A magnificent variety with large scarlet flowers, having a thread-like white margin to each segment, and a green and white inside base.

Hippeastrum Pearl Maiden.—A brindled or mottled variety, in which the flowers are of excellent form and substance; colour, claret red and white. All the above varieties of Hippeastrum were shown by Major Holford (gr. Mr. A. Chapman), and were among the best that have ever been presented to the notice of the Committee.

Rhododendron White Pearl.—This is a hardy Rhododendron with large flowers, that in the bud form are of deep rose-pink colour, but gradually become fainter in tint until they are almost pure white, except for a few minute red spots on the upper segment. The pedicels are not sufficiently strong to hold the large flowers well up towards the centre of the inflorescence, but in other respects—particularly in point of the coloured buds and size of individual flower—the variety is of very great merit. From Messrs. W. Cutbush & Son, Highgate, who had several good plants.

Thunbergia mysorensis.—This is a very old Acanthaceous plant that is perhaps better known in gardens as Hexacentris mysorensis. It makes a very showy climbing plant for cultivation in the warm greenhouse or stove, and produces long pendent racemes of purple and yellow-coloured flowers, the tube being purple and the limb, which is 1½ inch in length, yellow with reddish border. Shown by C. Buller, Esq., Warren Wood, Hatfield (gr. Mr. Aslett).

Narcissus Committee.

Present: H. B. May, Esq. (chairman), and Messrs. A. Kingsmill, J. T. Bennett Poe, P. Rudolph Barr, A. R. Goodwin, W. F. M. Copeland, H. B. Young, J. Jacob, E. F. Bowles, R. Sydenham, W. T. Ware, W. Poupart, Rev. G. H. Engleheart, R. W. Wallace, G. W. Leake, Jno. Pope, W. W. Fowler, Jas. Walker, Miss E. Willmott, J. D. Pearson, W. Goldring, and C. H. Curtis.

Miss F. W. Currey, Warren Gardens, Lismore, Ireland, displayed an excellent collection of rare and standard varieties of Narcissi. The flowers were beautifully developed, and appeared wonderfully fresh and bright. In the centre of the group were a number of white varieties of the large Ajax type; thus there were seen a charming vase of White Queen, a flower that may be likened to a white Sir Watkin, with exquisitely frilled edge to the trumpet, and a bold almost pure white perianth; and Lady of the Snows, one of the best of last season's novelties. The massive yellow King Alfred, of richest yellow colour, one of the largest and tallest growing Daffodils; Glory of Noordwyck, another grand Ajax; Constellation and Lucifer, both of the beautiful incomparabilis type, and both set off by their orange-scarlet coloured crowned coronas; Firebrand (Burbidgei), with magnificent fiery-red cup, surrounded by a perianth of perfect form; Ariadne, with large spreading cup of ivory-white, and lighter perianth, a most dainty flower; S. A. de Graaff, of the tridymus section, a race from Tazetta × Ajax; the double Jonquil Campernelle, fragrant as well as beautiful; and the Pheasant's Eye, etc. (Silver Gilt Banksian Medal.)

Messrs. William Bull & Sons, King's Road, Chelsea, staged a small group of Daffodils, of well-known varieties. Weardale Perfection, although not new, is hardly surpassed as a trumpet Daffodil; Mad. de Graaff, described as the queen of white trumpet Daffodils, etc.

Mr. Kendall, Newton Appleford, near Ottery St. Mary, Devon, displayed flowers of King Alfred. The specimens showed exceptional vigour even for this robust variety, and the rich yellow colour of both trumpet and perianth was developed to a remarkable degree.

Mr. Robert Sydenham, Tenby Street, Birmingham, again displayed a number of plants nicely flowering in moss fibre litter.

From Sir Joseph Gore Booth, Bt., Lissadell, Sligo (gr. Mr. J. A. Cooper), came a very well-grown collection of flowers representing each of the three sections. All the double varieties of N. incomparabilis appeared to be present, and fine Ajax Daffodils were seen in Victoria (one of the boldest), Golden Bell, M. J. Berkeley, Henry Irving, etc. Among the cup Daffodils, "Oriflamme," with a pure white perianth and rich orange yellow coloured cup was conspicuously good. Of the Poeticus type we noticed N. P. ornatus, Almira, and the best of the three, which is "Homer." (Silver Banksian Medal.)

Messrs. Barr & Sons, King Street, Covent Garden, London, W.C., also contributed a collection of the varieties now in bloom. Close to the old-fashioned but still popular Ajax variety Emperor was the more expensive "Peter Barr," also Lord Roberts, King Alfred, Duke of Bedford, &c. A new seedling with white perianth and very large yellow trumpet was as yet unnamed. The trumpet would probably be considered out of proportion to the flower. Loveliness is not new, but as a pure white Daffodil it appeals to us as one of the most charming, partly on account of the somewhat unusual form of the slender trumpet. (Silver Banksian Medal.)

C. Van Tubergen, Jun., Zwanenburg Nurseries, Haarlem, Holland, staged a large and representative collection of Tulips. The group was extremely interesting on account of the many types and species it contained, and as showing the variety and wealth of the genus Tulipa. The fantastic T. acuminata, the Turkish Tulip, whose long petals are narrowed to points; T. viridiflora præcox, with greenish flowers produced on long robust peduncles; the beautiful T. Micheliana, with heavy blotches of black, margined with a yellow band in the centres of the flowers, that show well against the lovely red of the petals; "Sulphur Gem," a yellow form of T. fulgens; T. linifolia, resembling nothing so much as a scarlet Anemone; Mrs. Moon, a choice yellow May flowering Tulip of great substance; Carnation; and Hackaert, a single early variety of massive proportions, the bold crimson coloured flowers quite the largest on the stand. (Silver Gilt Banksian Medal.)

AWARDS OF MERIT.

Narcissus, Mrs. Robert Sydenham.—A white trumpet Daffodil of great beauty, but of not over-large size; may be likened to an improved Loveliness. The perianth is of fine form, and possesses more substance than the older variety. The trumpet is rather less white than the florets, and is, moreover, well proportioned. Shown by Miss Currey, Lismore, Ireland.

N. Brilliancy.—We were unable to trace this flower, as it was removed from the Hall soon after the award was granted. It is described by the raiser as an improved Barrii conspicuus, with chalice of a beautiful shade of orange scarlet. Shown by Rev. G. H. Engleheart, Dinton, Salisbury.

N. The Rising Sun.—This is one of the very best formed trumpet Daffodils, as regular and as symmetrical as any florist could desire. The trumpet is expanded at the apex, and very much frilled, and the colour of perianth and trumpet is of the richest yellow. Shown by Mr. W. Welchman, Upwell, Wisbech (gr. Mr. Jno. Scot).

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, R. Brooman-White, W. A. Bilney, H. Ballantine, H. A. Tracy, W. H. Young, H. G. Alexander, W. H. White, H. J. Chapman, F. Menteith Ogilvie, F. Sander, R. G. Thwaites, A. A. McBean, Arthur Dye, W. Boxall, H. Little, J. Wilson Potter, and Francis Wellesley.

There was a grand show of Orchids.

The Society's Gold Medal was awarded to Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), for a magnificent group of splendidly-grown and well-arranged Orchids. The centre was filled with a tall specimen of Cymbidium eburneo-Lowianum, with 17 spikes, bearing together 107 of its large ivory-white, rose-tinted flowers, and for which a Cultural Commendation was awarded. On one side of it was a noble specimen of the orange-scarlet coloured Ada aurantiaca, on the other a selection of the similarly tinted Masdevallia Veitchiana. At the back were good specimens of Vanda suavis and V. tricolor, many years in the Westonbirt collection, and grouped at each end was a very fine and varied lot of Odontoglossums. Other remarkable plants were Cymbidium Lowianum concolor, and the hybrid of it, C. eburneo-Lowianum concolor; a fine C. eburneum, Lælia Jongheana magnifica, the curiously-tinted L.-C. Dora, "Westonbirt variety," Cattleya Empress Frederick, "Heaton variety," etc.

J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), was awarded a Silver-Gilt Flora Medal for a large and effective group, in which were good Cymbidium Ballianum, C. Lowio-eburneum, and other Cymbidiums; a very fine selection of Lycaste Skinneri; a number of finely-flowered Oncidium concolor; some excellent Odontoglossums, including the pretty O. excellens Lowiæ; and a good lot of Cattleya Trianæ, of which the variety Rajah, of the Backhousiana class, with effective purple feather on the petals, and C. T. Circe, of a delicate shade of rose-pink tint, were the best.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), was awarded a Silver-Gilt Flora Medal for a fine group, rich in rare varieties, and including the large and beautiful natural hybrid Cymbidium I'Ansoni, which was voted not only a First Class Certificate by the Orchid Committee, but also the First Diploma as a hybrid Cymbidium. The plant, like all the rest in the group, was splendidly grown, and consequently there was no difficulty in improving on the Award of Merit given when it was first shown, May 23, 1900. In the group the varieties of Miltonia vexillaria, and especially Chelseense, and the richly-coloured Empress Augusta Victoria were fine; Odontoglossum Wiganianum, O. amabile, O. nevadense, O. Oerstedii, O. nebulosum, varieties of O crispum, and others well represented; also Dendrobium infundibulum, Phalænopsis sumatrana, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, secured a Silver Flora Medal for a fine group, chiefly hybrids. Among the Odontoglossums were home-raised O. excellens, O. Othello, O. Hallio-crispum, and some pretty unnamed hybrids. Of Brasso-Cattleyas there were the pure white B.-C. Queen Alexandra, the blush-white B.-C. Digbyano-Schroderæ, B.-C. Digbyano-Mendeli, and others. Other fine hybrids were Cattleya Enid, C. Empress Frederick, Lælio-Cattleya Henri Nemy, with orange-coloured flowers, L.-C. luminosa, L.-C. Veronique, L.-C. Wellsiana, &c.

Messrs. Sander & Sons, St. Albans, were awarded a Silver Flora Medal for a good group containing two very beautiful and remarkable plants (see Awards), and a generally good collection, among which were noted Zygopetalum Sanderianum, a handsome flower, with sepals and petals heavily blotched with chocolate-purple, and bright blue lip. Lælio-Cattleya Ernestii, yellow, with dark red marking on the lip, Miltonia Bleuana, Renanthera, Imschootiana, Epidendrum elegantulum, a finely-flowered specimen of Lælia purpurata, the singular Polystachya bracteosa, the new white P. Haroldiana, the bright rose-red Cochlioda rosea, several Sarcochilus Hartmanni, Saccolabium bellinum, and other interesting species.

Messrs. Jas. Cypher & Sons, Cheltenham, secured a Silver Flora Medal for a pretty and effectively-arranged group, containing good examples of most of the Orchids of the season. Notable among them were a selection of the pretty Cattleya Schroderæ, and an allied variety imported as a new species, and bearing a general resemblance to a good C. Schroderæ, but with the lip formed like C. Trianæ, and with a more expanded fringed front. It is silver-white, tinged with lavender colour, the lip being rose-pink, with a very distinct shade of orange in the tube, which does not open, as in C. Schroderæ. Of Odontoglossums there were a good selection of O. crispum; the large, yellow-tinted, finely-blotched O. loochristyense Empress Frederick; a singular hybrid, with pale yellow, sparsely-blotched flowers, not easy to describe; some bright rose Miltonia vexillaria, and yellow Oncidium concolor; Selenipedium caudatum, the fine Dendrobium nobile Heathii, and other Dendrobiums.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, showed a group, in the centre of which was a very fine specimen of Dendrobium crassinode, with about 370 flowers, good D. Findlayanum, D. Pierardi, D. albo-sanguineum, the fine yellow D. Wiganiæ xanthocheilum, and other Dendrobiums; Odontoglossum crispum Jeanette, a good spotted form, O. crispum xanthotes, "Low's variety," &c. (Silver Banksian Medal.)

M. Chas. Vuylsteke, Loochristy, Ghent, showed a small group of select hybrid Odontoglossums, including good O. Wiganianum, a very finely-coloured O. Lawrenceanum, O. Rolfeæ, and its fine variety nigrescens, and others.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), sent two marvellously-developed spikes of Phalænopsis Aphrodite, taken from a specimen with 18 leaves, and which has been in the Burford collection 23 years. Also the pretty Dendrobium amoenum, two finely-flowered Masdevallia igneo-Estradæ, raised at Burford (see Awards), and a pretty white Dendrobium, provisionally named Shillongense, and apparently D. lasioglossum.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium concolor, "Westfield variety," a strong grower and profuse bloomer, larger than the type.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), sent a superb specimen of Phaius Cooksoni, with 17 spikes of its beautiful rose and purple flowers, and for which a Silver Lindley Medal was awarded, as much for the fine state of cultivation to which Mr. Chapman had brought it as for the sterling merits of the plant, which was Mr. Cookson's earliest success in Phaius, and still one of the best. Mr. Cookson also showed the clear yellow Lælia De Geesteana, "Oakwood variety."

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent Odontoglossum Terpsichore (Pescatorei × polyxanthum), the finely-coloured O. polyxanthum rosefieldiense, and the very beautiful and unique O. crispum Queen of the Earth, a finely-formed flower, heavily blotched with mauve-purple, as in O. ardentissimum, and well-developed lip of true crispum form; also the handsomely-blotched O. crispum Lionel Crawshay.

The Marquis de Wavrin, Chateau de Ronsele, Ghent, sent Cattleya Forgetiana Hort., a singular variety, with elongated inflorescence of two flowers, bearing some resemblance to C. Brymeriana and to some of the C. Lawrenceana crosses.

C. J. Lucas, Esq., Warnham Court (gr. Mr. Duncan), sent the pretty spotted Odontoglossum crispum Lucasianum.

Mr. H. A. Tracy, Twickenham, showed a good variety of Cypripedium Katherine.

Col. Rogers, D.S.O., Sevenoaks (gr. Mr. Usher), sent a fine specimen of Dendrobium nobile. (Cultural Commendation.)

L. G. Sutton, Esq., Reading, sent D. nobile.

G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), sent Cypripedium Bridgei magnificum.

Messrs. William Bull & Sons, Chelsea, showed Odontoglossum crispum Princess Ena, a large white form, with fringed segments, and several other finely-formed varieties.

AWARDS.

First Class Certificate.

Brasso-Cattleya The Baron (B. Digbyana × C. Lord Rothschild), from Messrs. Sander & Sons. One of the most beautiful and exquisitely-tinted of the section yet shown; large in size, beautiful in form, and indescribably attractive in the minutely elaborated freckling and veining of its colours. Sepals yellowish-cream coloured, slightly freckled with rose on the face and tinged purple at the back. The broad petals cream-white to primrose coloured, beautifully freckled with purple between the veining. Lip broad, widely displayed and fringed, pale primrose-yellow, with a small emerald-green base, the middle area being charmingly decorated with rose-purple between the veining, a cream-white band encircling the colour. Front cream-white, slightly tinged with rose. A very remarkable and attractive flower.

Cymbidium I'Ansoni (nat. hyb.), from Sir Frederick Wigan, Bart. (gr. Mr. W. H. Young). One of the finest and rarest Cymbidiums. Flowers large, ivory-white, with a slight buff tint, and indistinct purplish lines. Lip white, and with a purple mark as on C. Lowianum.

Award of Merit.

Cattleya Trianæ J. Gurney Fowler, from Messrs. Sander & Sons. A grand Cattleya, with large and finely-formed flower. Sepals and broad petals silver-white, tinged with lavender colour. Front of the lip glowing crimson, disc rich yellow, with lighter veining from the base.

Lælio-Cattleya Hopkinsii (L.-C. Pallas × L. tenebrosa), from Francis Wellesley, Esq. (gr. Mr. Hopkins). A finely-coloured, brightly-tinted flower, well showing both parents. Sepals and petals bright purplish rose, with darker veining. Lip large and crimped, ruby-red in the centre, changing to purplish-crimson, and with a narrow lavender margin.

Masdevallia igneo-Estradæ, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A pretty and floriferous hybrid raised at Burford, the specimens being differently tinted, some cream white, tinged and veined with rose; others yellowish with purple markings on the veining and purplish tails.

Lælio-Cattleya illustris magnifica (L.-C. Latona × C. Dowiana aurea), from Messrs. Charlesworth & Co. A new and fine colour in Lælio-Cattleyas. Sepals and petals reddish purple, with an orange shade; lip glowing ruby red with an orange tint. A very bright flower.

Cymbidium Lowianum, "Fir Grange variety," from W. A. Bilney, Esq., Fir Grange, Weybridge Heath (gr. Mr. Whitlock). A very handsome, large, and dark-coloured variety, the marking on the lip being of a scarlet-tinted chestnut red.

Odontoglossum percultum Meteor, from M. Chas. Vuylsteke, Ghent. A pretty cross between Rolfeæ and ardentissimum. Flowers cream-white, finely marked with purple.

Diploma Awards.

The competition was in Masdevallias and Cymbidiums, and various exhibitors entered.

Masdevallia Species. *First Diploma.*—M. Veitchiana grandiflora from Jeremiah Colman, Esq. (gr. Mr. Bound).

Masdevallia Hybrids. *First Diploma.*—Masdevallia Bocking hybrid, from Sir Trevor Lawrence, Bart. *Second Diploma.*—Masdevallia igneo-Estradæ, from Sir Trevor Lawrence, Bart.

Cymbidium Species. *First Diploma.*—C. Lowianum, "Fir Grange variety," from W. A. Bilney, Esq. *Second Diploma.*—C. grandiflorum punctatissimum, from Jeremiah Colman, Esq.

Cymbidium Hybrids. *First Diploma.*—C. I'Ansoni, from Sir Frederick Wigan, Bart. *Second Diploma.*—C. eburneo-Lowianum, from Sir Trevor Lawrence, Bart.

OPENING OF FLOWERS.

Mrs. Scott delivered a very interesting lecture, which was mainly a description of a large number of photographs she had taken for the purpose of illustrating the movements in the sensitive plant (Mimosa sensitiva), and the processes in the opening of various flowers. In some cases the photographs were taken at intervals of five minutes on a circular plate or glass measuring 12 inches in diameter, and by showing these with a lantern, which accomodates 350 photographs, turning the plate round as fast as convenient, the various movements were depicted just as the movements in a crowd are shown by a system of animated photography. Most of these processes are well known to botanists, but the system of photographing adopted by Mrs. Scott is calculated to bring to notice circumstances of scientific importance that have not previously been brought to light. The first plant shown was Sparmannia africana, which was doubtless selected because the flowers and flower stems exhibit more marked movements than most other plants. Some of these can be studied quite easily by the unaided eye. Next was illustrated the wonderful revolutions of the shoots and leaves of Maurandya in its task of climbing around the stem of a tree. The illustrations of the gradual development and opening of a Fuchsia flower, and afterwards of a seed pod, were very realistic. After a Crocus had been similarly exhibited, Mrs. Scott showed her audience a large number of photographs taken of Humble Bees on a flower of Scabiosa. The 340 photographs of the bees were taken in the space of one quarter of an hour, and the revolution of the plate before the lantern was sufficiently quick to make the movements of the bee appear as quick as those of a much more nimble insect. For obtaining some of these photographs, Mrs. Scott has had to be at work from 4.30 in the morning until 12 o'clock at night. The results she has succeeded in obtaining should encourage others to take up the work, when by employing a machine with a larger lens, commanding a wider field, and one that would photograph accurately by an automatic process, even greater success might be expected.

DUTCH HORTICULTURAL AND BOTANICAL.

March 14.—At a meeting held on this date, the committee awarded First-Class Certificates to Cattleya Harrisonæ, from Mr. H. C. Hacke, Baarn; Lælia Briseis (harpophylla × purpurata alba), from the same exhibitor; Cypripedium × Baron Senarclens de Grancy (seedling), as a new plant, from Mr. J. H. Tromp Meesters, Steenwijk; and C. "Madame Budde" (superbiens × Leeanum), from the same exhibitor.

Certificates of Merit were awarded to Cypripedium "Major Kikkert" (insigne × callosum) and Odontoglossum Halli (leucoglossum fulgens), from Mr. C. J. Kikkert, Haarlem; also to Cypripedium Rothschildianum, from Mr. C. W. R. Scholtenyr, Amsterdam.

A Botanical Certificate was awarded to Vanda gigantea and to Ionopsis paniculata, from Mr. C. W. R. Scholtenyr, Amsterdam.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

March 22.—There was a moderate display of plants at the meeting held on this date.

Philip Smith, Esq., Haddon House, Ashton-on-Mersey, displayed a very good group of Dendrobiums. (Silver Medal.)

Dr. E. Roberts, Hale, also gained a Silver Medal for a group of Dendrobiums, in which were some choice forms.

Groups were also shown by Messrs. S. Allen, A. J. Keeling & Sons, and J. W. Moore, Ltd.

J. W. Moore, Ltd., Bradford, obtained a First-Class Certificate for a distinct yellow form of Dendrobium × Ainsworthii, called D. × Ainsworthii var. aurifera, and an Award of Merit for Lælio-Cattleya × Oricus.

P. Smith, Esq., obtained an Award of Merit for Lælio-Cattleya × Cappeii "Smith's var.," and Dr. Roberts a similar award for a Dendrobium seedling of unknown parentage.

NURSERY AND SEED TRADE ASSOCIATION, LIMITED.

March 26.—The annual meeting of the Association was held on the above date, at its offices, 30, Wood Street, Cheapside, London, to consider and approve of the report of the Committee of Management of the Association relative to the work done for last year and to pass the accounts for such period.

Mr John Harrison (Harrison & Son, seed merchants, of Leicester) was chairman, and members consisting of Messrs. Nutting & Sons, Cooper, Tabor & Co., Ltd., W. Paul & Son, W. Bull & Son, Barr & Sons, Protheroe & Morris, Howcroft & Watkins, B. Maller & Son, and others were present.

The report shows (1) That the Association consists of 185 members, including many of the wholesale seed merchants, florists and nurserymen of England, and on the Continent. (2) That the Association by its Secretary had answered 1,084 trade enquiries by its members relative to the financial position of persons seeking credit, and it had expended £22 17s. 6d. in making special enquiries through other Trade Protection Societies throughout the United Kingdom with which the Association is allied in addition to the information given by its own members, which is given gratuitously to assist each and its own records. (3) That the Association had collected £5,538, principally in small debts, of which the members had been unable to obtain payment. (4) The balance sheet for the year shows that, after discharging all liabilities, there was a balance of £102 11s. 9d. to the credit of the Association.

The Acts of Parliament for the Prevention of Corruption and the Fertilisers and Feeding Stuffs Act (1893) Amendment Bill, which have been brought into Parliament this year, and which affect the trades, were referred to and discussed. Mr. N. N. Sherwood (Messrs. Hurst & Son) was elected president, Mr. W. J. Nutting, treasurer, Mr. H. Simpson (Cooper, Tabor & Co., Ltd.) and Mr. G. H. Barr (Barr & Son), trustees, and a committee of management. The solicitors, auditors, and secretary were re-appointed.

The committee in its report ask members to solicit others to join the Association because:—(1) It is purely on mutual principles. (2) Members privately and without responsibility give, through the secretary, information to the others respecting the financial position of persons seeking credit. (3) The Association expends its income wholly for the benefit of its members. *J. P. Worrell, Secretary.*

TORQUAY DISTRICT GARDENERS'.

March 29.—This society held a highly successful show at the Bath Saloons, Torquay, on the above date. The entries exceeded those of any former show, and a high order of merit was maintained by the exhibits. Orchids and Gloxinias were especially good, and the group of miscellaneous plants shown by Miss Lavers, which was awarded the Silver Cup, and was composed of Orchids, Amaryllis, Sprekelia formosissima, Tulips, Arums, Lilacs, Hyacinths, Primula obconica, Hoop petticoat Narcissi, Caladiums, Palms, and arching wands of flowering Bamboo, fully 15 feet in length, was a noteworthy sight.

Mrs. Congreve, Mrs. Hassall, Mrs. Trevor Barkley, Miss Lavers, Capt. Tottenham, Mr. F. Wingate, and Mrs. Fordyce were among the winners of first prizes.

In the well-filled class for dinner-table decoration, the chief fault was the occupying too much space with flowers and foliage, this being especially noticeable in the first prize table.

Special prizes were offered by Messrs. Barr and Sons and other nurserymen, and classes for vegetables were provided. A freak of Nature was shown by the Dowager Countess of Crawford in the shape of an Arum Lily flower with two pure white leaves growing on the same stem. The double spathe is by no means rare, but it is not so common to find the leaves to be devoid of colouring matter.

Nurserymen, by contributing well-filled stands, did much to make the show a success. Messrs. Barr and Sons staged a quantity of the rarer Narcissi, amongst these being Isolde, King Alfred, Lord Roberts, Peter Barr, Mrs. G. H. Barr, Henry de Vilmorin, Firebrand, Cresset, Strongbow, White Queen, Admiral Makaroff, Calpurnia, Peach, Salmonetta, Cherry Ripe, Loveliness, and Mountain Maid. They also showed a collection of rock plants and herbaceous subjects, including several Frittillaries, Epigea repens, Primulas, and Lithospermum rosmarinifolium.

The Devon Rosary, Torquay, had a bright stand with hundreds of cut Roses, Acacias, Boronias, Tree Carnations, Azaleas, Anthuriums, Lilacs, and foliage plants, while from their fruit farm they exhibited splendid Strawberries.

Messrs. R. Veitch and Son, Exeter, had an interesting assortment of plants, comprising Camellias, Grevillea alpina, Darlingtonia californica, Dimorphotheca Ecklonis, Corydalis thalictrifolia, Impatiens Holstii, Sutherlandia frutescens, Thyrsacanthus rutilans, and a collection of dwarf plants.

Messrs. W. B. Smale and Son staged Cyrtoceras reflexa, Nicotiana Sanderæ, Tropæolum tricolorum, and other plants.

Obituary.

Elizabeth Cooper.—We regret to announce the death of this lady, which took place on April 1, at 6, De Vere Gardens. Deceased was the widow of the late Sir Daniel Cooper, Bart., G.C.M.G. Some of our older readers will remember that Sir Daniel Cooper was treasurer for the great horticultural exhibition held in London in 1866.

J. Windle.—This old established Florist passed away at Balham on March 30, at the age of 77, from apoplexy. Mr. Windle was an indefatigable worker up to the last, and his kindly disposition both in business and among friends secured respect from all who knew him. He has been a regular attendant at Covent Garden market for upwards of 25 years. Among those he has left behind are Mr. J. Windle, who for some years has been salesman for Mr. H. B. May, and Mr. F. Windle, salesman for Mr. P. Ladds. Deceased leaves a widow.

Answers to Correspondents

Botanic Garden: *C. A. L.* If you make application to the Curator, Royal Gardens, Kew, you will be likely eventually to obtain an appointment in those gardens, as you appear to be eligible in every way.

Clover Roots Dying: *W. B.* The plants are attacked by a fungus—Sclerotinia trifoliorum. See answer to *C. G.*, p. 176, in our issue for March 17.

Corrections: At p. 205 it should have been stated that the tree in question was planted by Lord Mountnorris—not by Lord Mountmorres.—In the article on Chinese Samshu on p. 194, line 11, "boiling husks" should have read "barley husks."

Gardenias Failing: *Hortus.* There is no fungus present to account for the diseased appearance of the shoots, but the injury appears to be caused by some external agency, such as burning or scalding. Have you placed the plants near to the hot-water pipes, or have the plants been fumigated too severely? Careless watering would be likely to produce the same injury to the young tissue of the shoots as your examples have.

Haricot Beans: *G. C.* The French Haricot Beans are obtained from varieties of Phaseolus vulgaris, or the same species as is represented by Canadian Wonder and other varieties, the pods of which we consume whilst they are in only a partly developed condition. Some Haricots are gathered just when the pods may be parted easily, and others after they have attained to their full size; consequently commercial Haricots vary much in their size.

Insects on Palm Roots: *W. B.* The white insects on the roots you send are allied to the mealy bug and are known as Ripersia terrestris. When potting the plants wash the roots in a solution of bisulphide of carbon, or if they are already potted apply one tablespoonful of this liquid to each 6-inch pot. Make holes in the soil with a pointed stake and pour the liquid into these. Keep the liquid away from any spark or light as it is very inflammable, and be careful how you handle it.

Names of Fruits: *C. E. Dursley.* 1, Dumelow's Seedling (Wellington); 2, not recognised, probably a local variety.

Names of Plants: *E. G. O.* Pholidota imbricata, one of the commonest Indian Orchids. Sometimes called Rattlesnake Orchid in allusion to the closely arranged imbricated bracts on the inflorescence and their resemblance to the "Rattle" of the Rattlesnake.—*G. F.* Teucrium fruticosa.—*A. S.* 1, Pyrus (Cydonia) japonica; 2, Forsythia suspensa; 3, Berberis (Mahonia) aquifolium.—*A. L.* 1, Dendrobium Pierardi; 2, Abutilon mollissimum (Sida mollis), —*J. M. L.* 1, Scilla sibirica; 2, Chionodoxa Luciliæ var.; 3, Scilla bifolia var.—*Fairmile.* 1, Hoffmannia Ghiesbreghtii; 2, Selaginella denticulata; 3, Maranta zebrina; 4, Chlorophytum elatum variegatum.—*Salop.* Dendrobium fimbriatum oculatum of the best type.—*J. W. B.* 1, Bifrenaria Harrisoniæ; 2, Oncidium luridum. —*W. G. S.* A good form of Odontoglossum Adrianæ.—*A. B.* 1, Physosiphon Loddigesii; 2, Polystachya Ottoniana; 3, Megaclinium falcatum.

Pagoscope: *D. J.* The description you refer to of this instrument was given in our issue for March 4, 1905, p. 133. It is now on the English market, and is made with the thermometric scale in the Fahrenheit system for the benefit of English growers. We have tested this instrument for several months past and find it to be quite reliable in its prognostications. The suggestions we offered were that a larger receptacle be made for the water trough of the wet bulb, and that it be placed in the front and not at the back of the instrument to facilitate filling.

Palm leaves withered: *J. F.* The injury is not due to fungus disease, but results from the unsuitable conditions for the plant in the dwelling-room. The leaves have the appearance of being dried out. The dry atmosphere obtaining in a living-room, with perhaps inattention to watering at the roots, are quite sufficient to cause the injury. To eradicate grubs and eelworm from potting soil, you should sterilise it by baking. If you can wait for some time before using the loam, you can also get rid of them by dressing it with gas lime. We have heard good reports from growers who have used the vaporiser you mention.

Primula cashmeriana; *A. J.* The increased size of the inflorescence is due to fasciation, which is clearly shown in the stems. At the same time we think the shade of colouring exceptionally good for this species, and the plant is worth perpetuating for that quality.

Solanums attacked by mites: *A. N.* We fail to find the mites you mention. You have probably mistaken the minute stellate hairs, with which parts of the plants are covered, for these foes. It will be better to dip the plants in tobacco water rather than to give excessive fumigation, which has probably caused much of the trouble.

Sweet Pea Society: *W. L.* Horace J. Wright, 32, Dault Road, Wandsworth, is the hon. secretary.

Tree Pæonies: *B. L.* The choice varieties of P. Moutan are usually propagated by grafting them on the fleshy roots of P. officinalis and other herbaceous species. But this is not the only means, for it is also possible to propagate them by layers and by cuttings. If cuttings are employed they should be taken off in July with a piece of the old wood attached. Insert each cutting in a small pot containing sandy soil and place the pots in an unheated frame or house where the cutting can be shaded from direct sunshine. During the winter the structure should be protected from the influence of frost by covering, or even by the employment of a moderate degree of artificial heat. Some of the nurserymen, we believe, supply a few plants on their own roots, but it is doubtful whether they are in a position to do so in respect to such varieties as have been quite recently introduced from Japan.

Tulips Failing: *A. D. W.* The bulbs are attacked with a Bacillus—B. hyacinthinus. Burn the bulbs and take care not to plant fresh ones, or any bulbous plant in the same beds next year.

Vine Diseased: *P. R. C.* Your vine is attacked by the mysterious disease known as "browning," about the cause of which little or nothing is certainly known. We should advise the entire removal of the affected upper portion and its destruction by burning.

Communications Received.—George Ellwood (next week) —F. G. Heath—D. R. W.—E. H. J.—J. E. C.—L. C.—F. B.—G. L. N.—J. H. B.—H. F.—J. J.—R. I. L.—J. V.—C. H. P. Muscat—F. W.—J. J. W.—G. B. M.—G. W.

For Market and Weather Reports, see pages xiv. and xv.

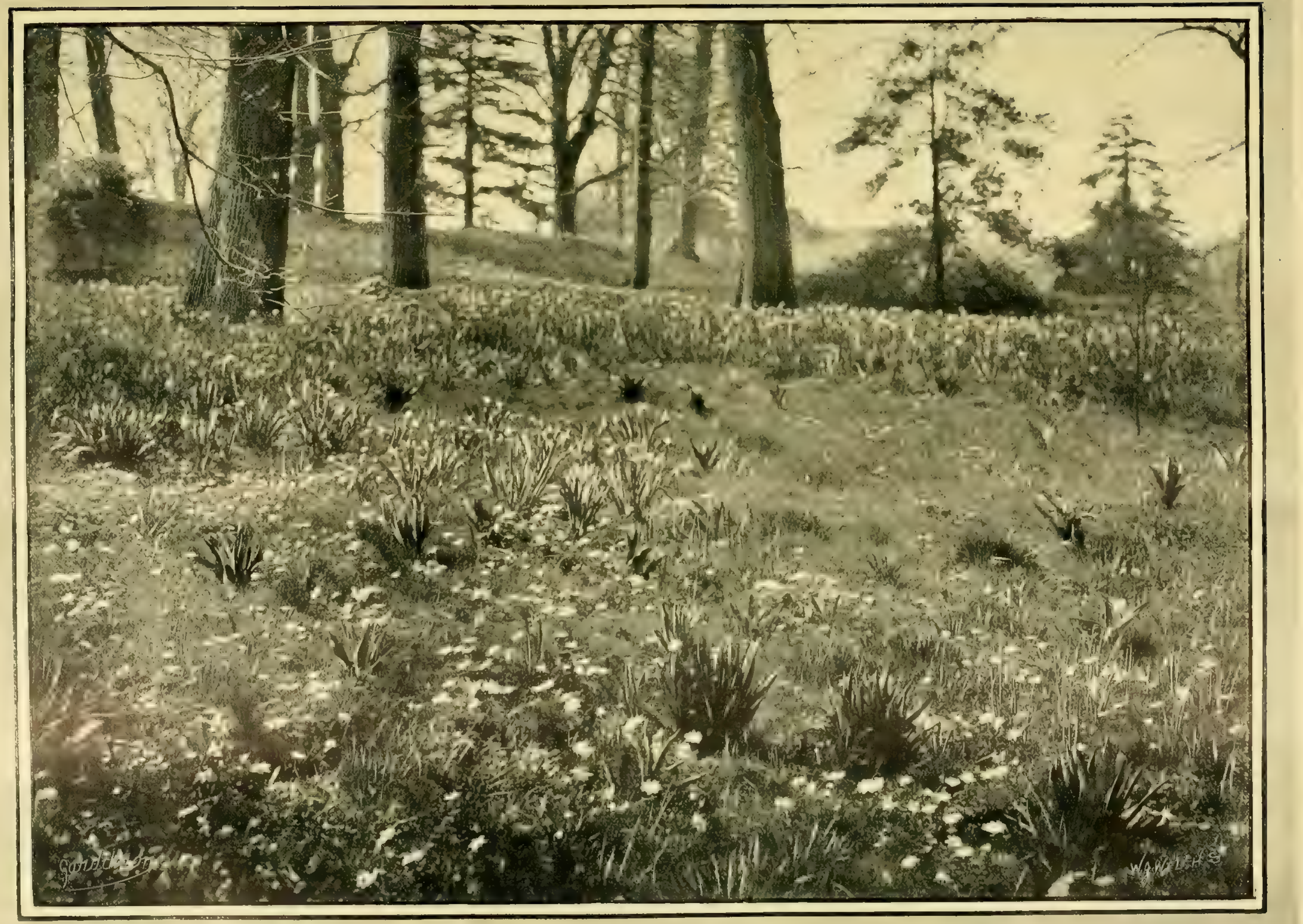

Photo by E. J. Wallis.

NARCISSUS AND ANEMONES GROWING AMONG THE GRASS IN THE ROYAL GARDENS, KEW.

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SPRING IN THE GARDEN.

It is not until the advent of April that we realise the full significance of the spring. After the comparative sterility and desolation of winter—though even then there is root progression under ground—this mild and beautiful season of the year, with its sudden sunlight and silvery showers, is a veritable revelation. We realise that "Nature," in the memorable words of Cowper, "is but a name for an effect, whose cause is God." I sometimes think that Natural Religion is more strongly inculcated in the earnest mind by means of the gentle, beneficent influences of horticulture, than in any other way; that we can still, like our First Parents, see God walking in the garden in the cool of the day. April, with her odour of flowers, her music of birds, and her marvellous transformations in the garden and in the grove, makes this earth of ours seem a green and fragrant Paradise, like that which man through disobedience lost of old.

At this exquisite season, when all things around us seem to wear the freshness of everlasting youth, nothing is more intensely interesting than to watch the development of the flowering trees. In my own garden, Prunus Pissardi, the Persian Plum, has been for some time in splendid bloom. So far as I am aware, this beautiful tree does not bear fruit in Scotland, but its blossoms and leaves—the latter especially, of deep chocolate colour—are highly ornamental. Another object of supreme fascination, which may be termed the successor of Prunus Pissardi, is the Japanese Pyrus Malus floribunda, whose colour much resembles that of a miniature Apple, the pink hue, in this instance, being somewhat intensified, and therefore, by reason of its blossoming luxuriance, very effective. Here it has succeeded admirably, even in a somewhat too shady situation.

Fruit trees are further advanced this season than they have been for many years. Even as I write, in the beginning of April, such Plum trees as the Czar and Victoria, and such Cherries as the Early Rivers, Black Eagle, and Morello (of which the last-mentioned likes a northern aspect) are already preparing to unfold their snow-white, freshly-fragrant flowers. The Almond tree which adorns the centre of my garden has reached a similar stage of evolution, and promises to excel all its former achievements. Apples are also, considering the recent frost, surprisingly advanced; such varieties as the Irish Peach and Beauty of Waltham, which already are revealing their tender beauty in the bud, may possibly be contemporaneous, for the first time, with the Cherries and the Plums. A splendid profusion of blossom may confidently be expected on all fruit trees; undoubtedly the result of the beneficent influence of last summer, in ripening the wood. For a similar reason our Roses will also be luxuriant, and, meanwhile, they are growing with marvellous rapidity. This is especially characteristic of certain fine varieties of recent introduction, such, for example, as Florence Pemberton, and Frau Karl Druschki, two of the grandest creations of the last decade; Etoile de France, described as the result of a cross between Fisher Holmes, which it somewhat resembles, and Mdme. Abel Chatenay; Duchess of Portland, Dr. William Gordon, the dark-complexioned Maharajah, raised at Colchester, and my own vigorous namesake from Messrs. Wm. Paul and Sons, at Waltham Cross. The gradual development of such varieties is intensely attractive; at this season there is a wonderful fascination in their delicate shoots and radiant leaves. These, indeed, constitute, to the artistic imagination, one of the greatest beauties of the vernal garden. Are not flowers themselves, as the great poet Goethe demonstrated, the fair children of leaves, harmoniously united for the purpose of perpetuation? *David R. Williamson.*

Observations on the time when the flowers of the various hardy fruit trees grown in the United Kingdom expand not only possess considerable interest but they have also an importance of special value. It is rare that we experience a long continuance of frost or other unfavourable conditions at this time of year, and if the period of flowering be extended over several weeks, some of the blossoms are almost certain to escape and thus provide at least a partial crop. It is one of the advantages of having a collection of several varieties which is not sufficiently recognised, for there is a wide difference in the time at which the flowers open. For example, the extreme range noted in Apples covers six weeks, in Pears four weeks, in Plums about three weeks, and in Cherries a fortnight. This is in the same season and in the same ground, but slight differences of situation and aspect will prolong or shorten the times of expansion materially, and in different years the actual period may vary by some weeks. Specially late or early seasons, however, affect all the varieties in a measure, though not to an equal extent.

The late Mr. William Paul kept close observations on the flowering of Apples over a series of years with most interesting results in relation to their cropping. Mr. J. Watkins, of Hereford, has also taken notes for a dozen years or more in a large collection of varieties, chiefly Apples, Pears, Plums, and Cherries. Mr. J. Udale, in the Experimental Garden at Droitwich, has kept a record of the flowering of the fruit trees there during the past 14 years, and the Reports published possess much interest. The subject has had my attention for a long period, and I have accumulated many notes and observations upon the behaviour of the same varieties and the same individual trees over a series of years. I am convinced that it would pay fruit-growers to give more attention to the matter. There is one notable advantage connected with having varieties which flower at different times, it does not restrict us to any special season of ripening; early flowering varieties are not necessarily all early fruiting, nor are all late flowers correspondingly late in maturing their fruits. Indeed, there seems to be very little, if any, connection between the two functions, at least as regards the trees; in Strawberries and bush fruits some relation is observable. Notes should be taken (1) when the first flowers expand; (2) when all are open; (3) when the first petals begin falling; and (4) when all the petals have fallen. This would give a complete record for each variety in the particular place. At present some state only when the first flowers open, and others when the trees are in full blossom, and this gives rise to some divergencies of dates with difficulty of comparison. *L. Castle.*

COLONIAL NOTE.

THE CEYLON BOTANIC GARDENS.

An illustrated guide to the Royal Botanic Gardens, Peradeniya, has lately been issued by the curator, Mr. Hugh F. Macmillan. It opens with a brief historical sketch of the garden, giving the names of successive directors, of whom Gardner, Thwaites, and Trimen were well known to readers of this journal as valued correspondents. A description of the gardens as they now are is given, together with an itinerary which will enable visitors to see with the least expenditure of trouble all the principal features of the garden, including the famous Indian Rubber trees and giant Bamboos which have been figured in our columns. The illustrations are numerous, and, though small, are excellent, and serve to convey to the untravelled reader some idea of the beauty of the garden and the luxuriance of its tropical vegetation. The gardens are at an elevation of about 1,600 feet above the sea-level, and have a moist but equable climate, the mean annual temperature being 76 degrees F., the thermometer falling sometimes as low as 55 degrees. The rainfall amounts to about 89 inches, distributed over 170 days. As this little book is intended for the casual visitor, but little is said of the work done in the laboratory and herbarium by the highly efficient staff, nor is much said of the services the gardens and their adjuncts render to economic botany and agriculture. The guide is excellently got up, and is very attractive.

CASSIOPE (ANDROMEDA) HYPNOIDES.

Although grown in Britain in 1798—prior to any other species of this genus—Cassiope hypnoides is to-day one of the rarest hardy plants in gardens. Not long after the above date, the plant disappeared from cultivation. In 1826 Canadian specimens were sent home and found their way to the rich collections of the Comely Bank Nurseries, Edinburgh.

This Cassiope is the smallest and most delicate of the three cultivated species of this genus, C. tetragona and C. fastigiata, both at home here, being larger plants, easily distinguished from the first-named by the square appearance of the much branched erect shoots, owing to the four-ranked arrangement of the closely imbricate leaves.

The late Prof. Graham in figuring and describing Edinburgh specimens of Cassiope hypnoides in the *Botanical Magazine* for 1829 (t. 2936), suggested that a plant so frequent in the North of Europe (it is also in Northern Asia and America) might one day in the North of Scotland reward the labour of some Scottish botanist, but, although Bryanthus taxifolius (Menziesia cœrulea), frequently an associate of Cassiope in Norway, &c., just penetrates into Scotland, the latter genus is unrepresented here.

Visiting Mr. Boyd, of Melrose, last spring, I was shown an excellent example, growing and flowering freely in a cold frame (see fig. 88). The slender, creeping stems, thickly clothed with subulate leaves, only rise from ½ to 2 inches in height, unless drawn up by the influence of glass or surrounding vegetation, &c. The white corollas of the solitary drooping flowers are prettily "set off" by the red calyces and stalks, and open in this country usually during April and May; abroad, they are somewhat later. Cassiope hypnoides is a peat plant, and when imported, often arrives mixed with Asiatic Salices and others, which, being diminutive, are good company. Too often the plants are scraped up, and then they usually die.

When planted in the open, artificial watering is necessary during dry weather. A north or east aspect is chosen here, where Ericas form a shelter on the sunny side. Such shrubs, provided they do not overhang the Cassiope, afford better and more natural surroundings than rock alone. Layered shoots are obtained naturally; cuttings are rather slow at first, and require a considerable time to grow into effective plants. *D. S. Fish, Edinburgh.*

PRUNING TREES AND SHRUBS.

The art of pruning, as applied to ornamental trees and shrubs, may be said to serve one or more of the following purposes:—To improve or alter the shape and appearance of the plant; to increase the quantity and improve the quality of the blossom; to bring about an improvement in health. Of all the arts that are employed in horticulture pruning is the one most frequently misapplied. Its proper practice necessitates an intimate acquaintance with the habit and nature of the subject operated on. For instance, a collection of flowering shrubs cannot be pruned properly unless the pruner knows the time of flowering of each one. Again, the aim in pruning a large-growing tree is to make it as perfect a specimen of its kind as is possible, and, at the same time, to preserve its peculiar characteristics. Therefore, a knowledge of its size and habit is essential. Unless the operator possesses such knowledge the plants are best left alone, for bad pruning is worse than none.

Pruning for Shape.

Pruning for the purpose of regulating the shape and size of a tree or shrub is more often practised in order to maintain it in some conventional form, such as is seen in topiary work, clipped hedges, rounded or pyramidal bushes, &c. This kind of pruning is of the simplest form; as a rule it is merely a process of clipping. Such matters as time of flowering and habit of the plant are of no moment. The chief question is, when is the best time to prune?

Fully-grown hedges or bushes of Yew, Holly or Box are usually clipped in July or August. During these months work in the garden is, as a rule, less pressing than at other times, and these summer months are as suitable as any other. The plants, moreover, retain their neat appearance throughout the autumn, winter and spring months. With young hedges more careful procedure is necessary. The clipping should be done earlier—say, in June; and a second shortening back of stronger growths take place in September. This more frequent pruning is necessary in order to give a thick base to the hedge or bush. When old hedges need cutting back to the bare wood, as they occasionally do, the work should certainly be undertaken in spring, so as to allow the longest possible period for the naked places to become furnished with growth again. The inside branches of a hedge or clipped bush are necessarily stunted and gnarled, and do not readily break into new growth. The same rules, as to time of pruning, apply also to those level banks of Laurel-Cherry and Rhododendron so often employed to furnish shady places in gardens. The ordinary annual pruning may be done in July or August, but the occasional hard cutting back must be done, say, in March or April.

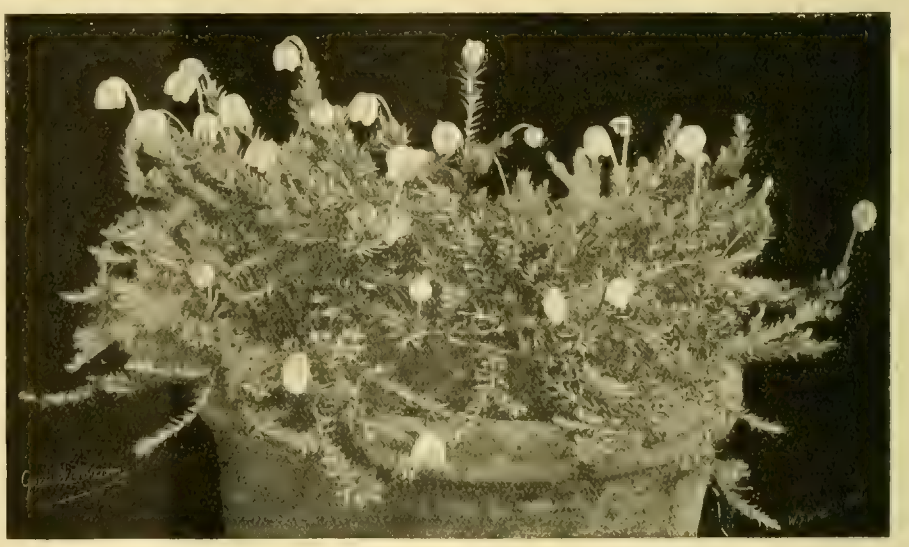

Fig. 88.—Cassiope hypnoides.

Pruning Trees.

This branch of pruning is more important than the preceding, but is not so generally understood, nor so often practised. The great majority of trees are planted and left to assume such forms as conditions and circumstances permit. I need not enter into any elaborate defence of the practice of pruning the larger-growing trees of our parks and gardens, although that practice is by some writers violently opposed, and of all the arguments that are employed against it the most absurd is that it is an interference with Nature. To such critics a sufficing answer is that the art of gardening itself is essentially and almost entirely an interference with Nature.

There is, moreover, a mistaken idea prevalent that pruning such as I am about to discuss is recommended for trees grown for timber. This, however, is not the case. Forestry pure and simple is a thing quite apart from ornamental arboriculture in park and garden. The forester aims solely at building up a trunk which will yield the maximum amount of useful timber and occupy the least possible space. The main object of the arboriculturist, however, is to so control the growth of his trees as to produce individually beautiful specimens. He may desire a noble contour of branch and foliage, or a lofty tree, with its leafy canopy reaching to the ground; but the production of cubic feet of timber is, in itself, merely a secondary matter.

However, I am not now concerned in advocating, much less defending, the practice of pruning large-growing trees, but wish to describe the proper methods, and to indicate the results those practices bring about. If the arboriculturist does not like the type of tree this kind of pruning produces, there is no more to be said. I may, however, state that it is adopted in most of the great tree collections of the present day, both public and private.

In pruning such trees as I am now considering—the Oaks, Elms, Ashes, Maples, Chestnuts, and others of a similar type—it is rarely necessary to give any consideration to the production of flowers and fruit. The flowers are frequently of little beauty, and even in the case of beautiful flowering trees, such as the Horse Chestnut, such pruning as is required should be done before the trees reach their adult stage. Indeed, it may be said of all trees that the earlier the training is commenced the less of it will be necessary.

The Formation of the Tree Trunk.

In the great forest areas of the globe, trees are generally found growing in masses and as close together as their minimum requirements of light and space permit. The trunks, which the forester loves to obtain, are straight, erect, and naked. Only occasionally are there found wild specimens well filled out on every side, evenly balanced, and, perhaps, furnished almost to the ground with foliage, such as is generally the planter's aim in pleasure grounds and gardens. In these latter places, however, where often trees from many different parts of the globe are congregated on a few acres of ground, and planted singly or in small groups, many species, especially those of exotic origin, have a tendency to become unduly bush-headed and dumpy in appearance, and to lose that stateliness which properly-proportioned height and breadth give. The first aim in pruning is to prevent this deformity, and to obtain a straight, strong trunk or central axis of sufficient height.

There is also another consideration. No danger to big trees is so common as that which arises from the forking of the trunk. This divides the tree into two, three, or more parts, which do not always sway in unison during high winds, in consequence of which a crack starts sooner or later at the fork. Damp enters, fungoid parasites follow, and finally a storm comes which rends the tree in twain. In sheltered places and in plantations the danger from winds is not great; but the majority of our specimen trees are given space for their fullest development, and need a strong, single bole.

Most persons admire loftiness in trees, but height in isolated specimens adds to the risk of damage by wind, and an observer will find that trees of great age and size are comparatively low and spreading, or, if they are lofty, their trunks are undivided for the greater part of their length. All the lofty trees of the earth have this character—the Gum trees of Australia, the Pines, Firs and Sequoias of North America, and the Palms of the tropics.

To secure the production of a trunk of this description it is necessary to keep a watch on it when it is young. The first and most important point is that it should always be kept to a single leading shoot. As long as the top of the tree remains accessible to the pruner, rival leaders should be shortened back or removed; but if the original leader by accident gets broken it should be replaced by another shoot.

In most of our deciduous trees a suitable side shoot near the top can usually be selected to replace a broken leader. It should, if necessary, be brought into position by tying to a stake, and must be encouraged to make headway by pruning back other shoots near that might otherwise assume the lead.

Many Conifers, especially those of the Spruce and Fir tribes, produce their branches in regular tiers or whorls; a lateral branch is, therefore, of no use for replacing a lost leading shoot. The branches are, as a rule, not capable of transforming themselves into erect-growing shoots, and if one be tied up it always tries to regain its original drooping or horizontal position. Propagators of these Conifers experience the same difficulty when they attempt to increase their stock by rooting or grafting the side branches. To obtain a new leader for these trees the broken one should be cut off close to the uppermost tier of branches, and this tier and, in cases, the whorl below also must be very much shortened back. This will cause the cut-back leader to push out one or more shoots of the erect-growing kind. When strong enough, the most vigorous of these may be selected as the new leader, and the others removed.

When a tree has reached, say, half its natural height it may be left to itself, for it will nearly always be found that once a strong leader has developed this will keep its place, providing no accident occurs, for as long as the natural habit of the tree allows.

Side-Pruning.

The greater proportion of the trees used for furnishing our gardens are of exotic origin. Species from all the cool temperate regions of the globe, inhabiting, in their native state, every variety of position and climate these latitudes afford, are brought under practically uniform conditions in the few acres of a British garden. It happens, therefore, in even the most favoured places, that some of the trees are not given the conditions most suitable to them. The effect (especially on species from somewhat warmer countries) is often shown in a tree assuming a stunted, bushy habit under cultivation, whereas, in its own home, it is lofty and graceful. In such cases it is the work of the pruner to aid the tree in assuming its natural form.

This can be done by two methods. The horizontal development of such trees, as opposed to their vertical development, should (1) be checked by pruning back the side branches. The cut should, as often as is possible, be made at the region of a fork, so as to leave a smaller branch with its twigs, rather than a stump. The operator's judgment should also be exercised as to whether (2) a proportion of the branches should not be entirely removed. A comparison of the number of branches on a young tree with those of a fully-grown specimen of the same species shows how drastically Nature thins the branches. The pruner should be guided by this fact in such cases as those under discussion, and remove too crowded branches. As a matter of fact, experience has conclusively proved that a tree may be brought out of its stunted state and made to grow again in height by this process alone.

The importance of shaping a tree into its proper form when young cannot be too strongly insisted. There is much truth in the saying that "most pruning should be done with a penknife," meaning thereby that it saves trouble to remove superfluous and wrongly-placed growths whilst the shoots are still succulent twigs. Without developing a rigid formality of outline, a young tree should, nevertheless, be kept, in the main, to a pyramidal shape.

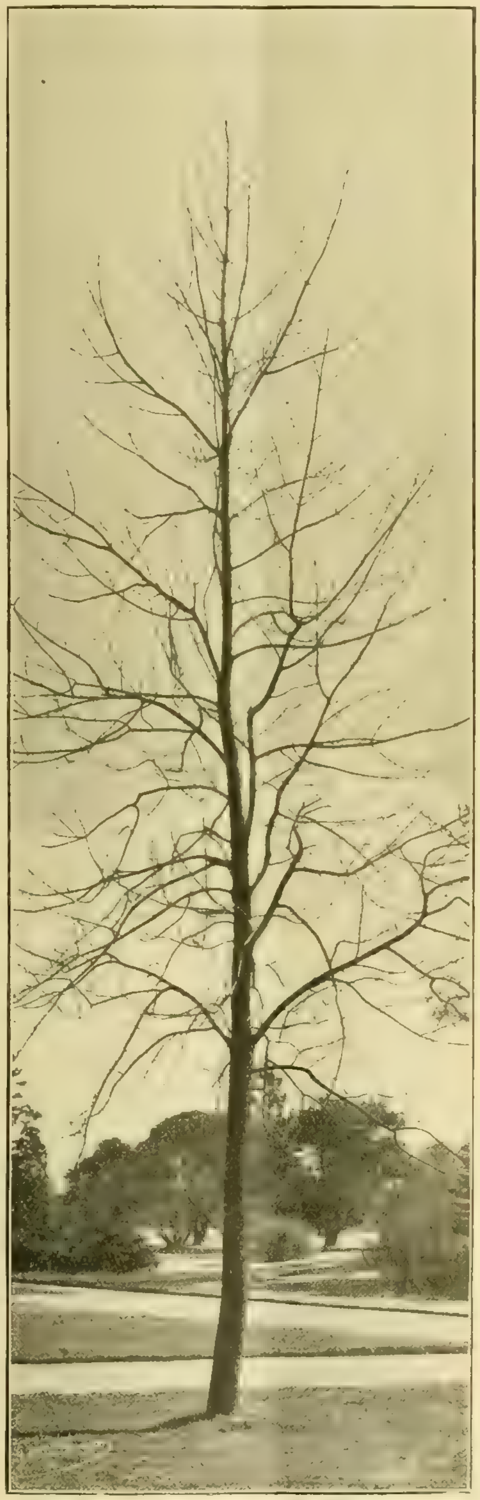

Fig. 89.—Pruning Trees and Shrubs—A Young Ash Tree. (See text.)

The pruning of specimen trees may be summarised thus: Keep them to a single lead; thin out and shorten back the branches of stunted or unduly spreading specimens; preserve, in the main, a pyramidal shape whilst they are young. When once the base of a trunk has been developed sufficiently the tree may be left to assume that natural shape and outline characteristic of the species to which it belongs.

The tree represented in fig. 89 is a young Ash which has been trained to one leader, and which has, in consequence, formed an erect, straight trunk now some 40 feet high. At this stage it can be left to itself, and if it grows well and no accident happens will make a fine, well-balanced tree. The outline is pyramidal, but not, I think, formal or ungraceful. I consider it, in fact, the normal shape of a healthy and vigorous, quick-growing, young tree. This question of shape or outline is, however, one upon which people disagree. Where symmetry and balance end and mere formality begins is a matter which must be left to individual taste and judgment. *W. J. Bean.*

(*To be continued.*)

FIR GRANGE, WEYBRIDGE HEATH.

Time has put its softening hand on the extensive and beautiful rock and "wild" garden which Mr. W. A. Bilney has, during the last few years, been carefully elaborating in the tract of Pine-tree clad land acquired by him at Weybridge Heath. On the highest part of the ground is the pretty and convenient residence, with conservatory outlet beside it. On one side of the house is a dense growth of Choisya ternata, one of our most beautiful evergreens, and perfectly hardy notwithstanding the fact that it is a native of Mexico. In the conservatory, on the roof of which Roses are blooming, are Azaleas, Cytisus, and other flowers. Outside are beds of spring flowers, now in perfect beauty, while patches of Crocuses and Narcissi appear in the smooth, well-kept lawn. In planting spring flowers on the lawn, Mr. Bilney deems it important to place each section in a different place. Thus, when the Crocuses are out of bloom, the grass in which they are growing can be mown, but were they mixed with later flowering bulbs, the unsightly withered foliage would have to remain until the flowers of the succeeding batch was over. Nearest the house is the new garden, with stepping stones between the rock-arranged sides. In this garden may be seen the plan which is carried out in every other part of the same gardens and grounds. Every important subject is massed by itself and not mixed with other species. In this way full effect is given to the individual beauty of each variety, and monotony, which is the bane of mixed planting, avoided. Patches of Chionodoxa Sardensis, C. Alleni, Chionoscilla, and Scilla Sibirica give bright blue tints, while S. Sibirica alba and other bulbous plants of the same colour furnish masses of white bloom. Androsaces are beginning to flower, Muscaris are fully out, and at intervals patches of the leading Narcissi are well displayed. Saxifraga oppositifolia and its white variety cap some of the mounds; Adonis vernalis is well in bloom; Daphne Blagayana and other spring Daphnes are in flower, and the earlier Iris, of the I. reticulata class, brighten the scene with their patches of dark blue colour. Here Gentiana verna gives a good show of flowers, and G. acaulis, to come later, is well set with buds. Connecting the new with the older garden are passed patches of Anemone blanda and Ramondia pyrenaica. In the older rootery garden Primula Sieboldi promises a good show; Shortia galacifolia is in bloom; and the Trilliums are showing strongly for flower. The walks wind beneath the Pine trees, and the rock gardens are everywhere backed by shrubs, climbing Roses over dead Pine trees being placed at suitable points. In one part a fine group of Rhododendrons encircles collections of Spiræas and other flowering shrubs. Beyond is a miniature waterfall, rivulet and lake, planted with suitable plants, Iris Kæmpferi varieties and Phormium tenax being prominent. Continuing round the undulating walks, varieties of Rosa Wichuriana, clumps of

Azalea mollis, and plantations of Bamboo and other sections of ornamental shrubs appear. With reference to these, and especially to Hydrangea paniculata and the Bamboos, Mr. Bilney states that it is a common belief that large supplies of water are constantly needed. His experience, gained on the shallow, sandy soil of this garden, is that if the ground is mulched, the moisture obtained during winter and spring is sufficient. In one place Omphalodes verna is finely in bloom; then follow large patches of Narcissus minor minimus and N. cyclamineus. Beyond, Pernettyas, Gaultherias, &c., flourish in the low ground. In the dell Helleborus orientalis varieties and other Christmas Roses are well in bloom, beside an arch formed of old plants of Rhododendrons. Close beneath the trunks of some large Pines are fine tufts of hardy Cyclamen. These are planted mixed, the varieties of C. Coum being partially sheltered by the larger-leafed C. hederæfolium. The Coum section flowers in early spring, and the C. hederæfolium later, so that a prolonged season of bloom, with other advantages, are assured. Foxgloves, among the commonest, and most beautiful of hardy flowers, are grown in profusion, together with a few of the rarer species of Digitalis. Aconites, Delphiniums, Irises, Frittillarias, &c., are seen in large batches. The Crown Imperials are sending up strong flowering spikes, and the smaller species, such as F. pudica, give great variety. At one point a specimen of Rhododendron Nobleanum has just furnished a fine show of twenty-seven trusses of bright red-rose flowers. This and the other hybrids of R. arboreum are the earliest and brightest of our showy Rhododendrons, but the florist has almost discarded them for larger and later flowering forms. Mertensia virginica is fine; so also are patches of the leading Erythroniums, Leucojums, &c. Anemone appenina is in full bloom; also A. Hepatica varieties, which are rich in blue, rose, and white tints. One nook has a plantation of Tree Pæonies, not altogether successful by reason of their early flowering; another has a full collection of Tritomas, &c. Iris reticulata is well in bloom, but this and others of its class are not so permanent here as on heavier soil.

In the Bamboo garden Bambusa palmata is the best of the broad-leafed section, and their beauty is enhanced by the collection of Ivies trailing over trimmed Pine trees which are arranged around. Here and there some rare shrubs are planted. In a sheltered nook the blue Primroses are very finely in flower. These are the true blue type, the flowers of the darkest being of a rich violet tint. The common Arabis is one of the earliest of white flowers; closely following come the varieties of Aubrietias, Saxifragas, &c. Mr. Bilney is a landscape gardener by instinct, and an enthusiast in all floral matters, hence the charming effect seen at Fir Grange.

The Orchids.

Always the most lauded, if not the most admired part of the garden, are the Orchid houses. Those who saw the fine group for which Mr. Bilney was awarded a gold medal at the meeting of the Royal Horticultural Society on March 6 will have some idea of the beauty of the Orchid houses at Fir Grange, for all the exhibited specimens were still there at the time of my visit. Some Dendrobiums, such as D. albo-sanguineum, are exceptionally finely grown, and all are flowering heavily. One house was literally packed with Dendrobiums in flower, while the cool houses were nicely furnished with the bloom of Odontoglossum crispum, O. triumphans, Sophronitis grandiflora, Oncidium concolor, &c. Other houses contain Cœlogyne cristata and its varieties. *J. O'B., March.*

AUSTRALIAN GRASS TREES.

A Grass tree may be likened to a gigantic Rush with a trunk like a Cycad and a flower-spike like a Reed-mace (Bulrush). The example shown in the illustration is small in regard to trunk, from 10 to 15 feet being the height of the trunk of a full-grown wild example, but it is full-size in regard to "grass" and flower-spike, the latter being 8 feet high, its upper half clothed with tightly-packed, white, odoriferous flowers. This plant has been in flower several months in the succulent house at Kew (see Fig. 90), and it is the same plant that flowered for the first time in 1886, when a figure of it was prepared and published in the *Botanical Magazine* (t. 6,933) under the name of Xanthorrhæa Preissii. A second species, A. quadrangulata, with a trunk 6 feet high, is also in flower in the same house. Grass trees are abundant in Western Australia. Miss North saw them in the Swan River valley in enormous quantities. She speaks of miles of them, covering large tracts of country, with flower-spikes 8 feet high, out of all proportion to the trees, their companions being Kingias, Cycads, Grevilleas, red Gums, &c., and says their leaves look like frosted silver in the sunshine. They are very brittle, quadrangular in section, and silvery-grey on the Kew plants. Judging by the growth of seedling Xanthorrhæas in this country, a full-grown specimen must be some hundreds of years old. The two plants standing guard to the Xanthorrhæa in the picture are fine examples of Othonna trinervia, a South African shrubby Composite. *W. W.*

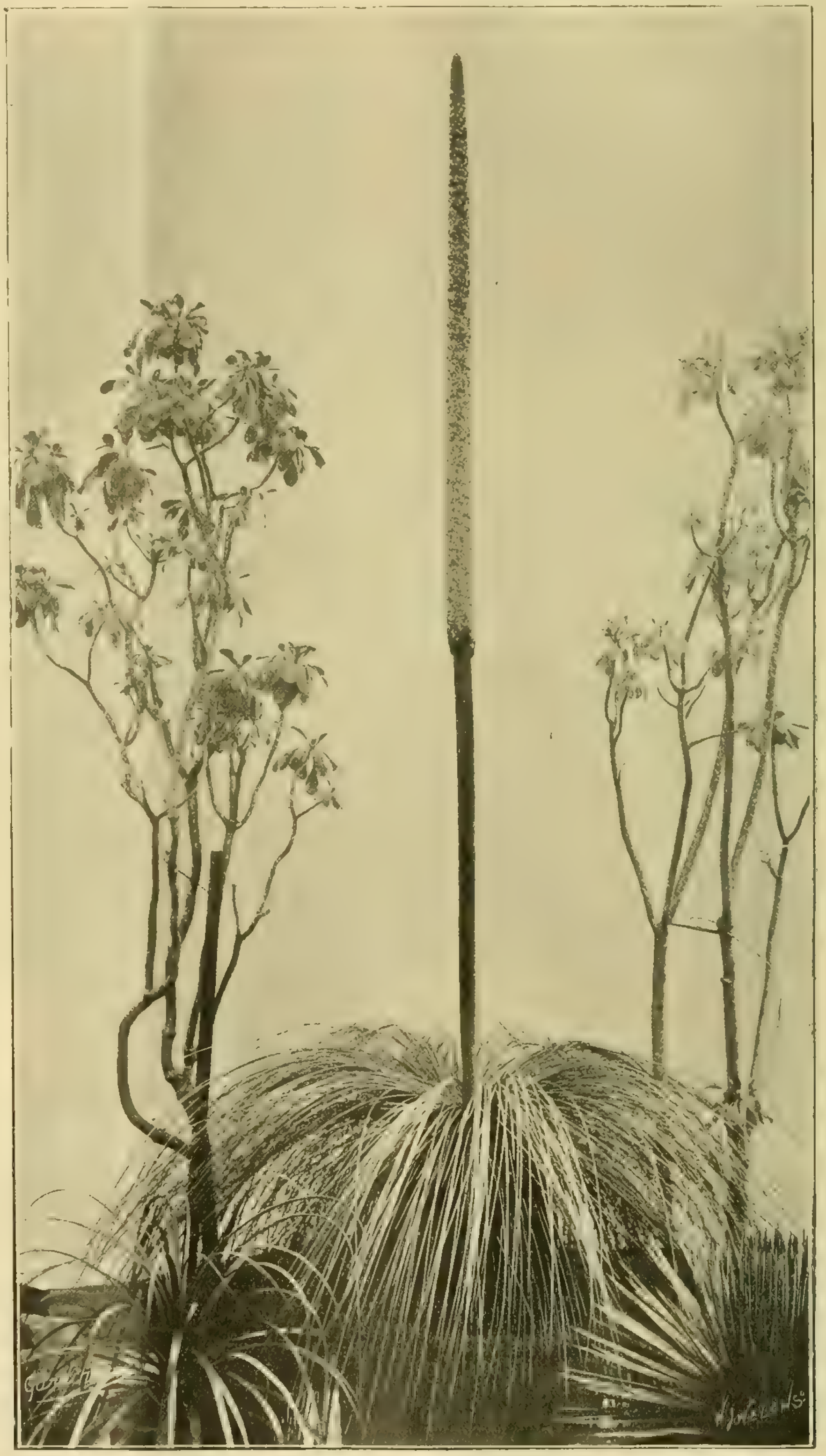

Fig. 90.—AUSTRALIAN GRASS TREE (XANTHORRHÆA PREISSII) IN CENTRE.

NEW OR NOTEWORTHY PLANTS.

PRIMULA DEFLEXA, DUTHIE N.SP.*

THIS very beautiful new alpine Primula was discovered by Mr. E. H. Wilson in mountain woods in Western China, at elevations between 10,000 and 13,000 feet (No. 4035). It has been raised from seed by Messrs. J. Veitch & Sons, in whose list of novelties for the current year will be found an excellent plate, showing two flower-heads. It evidently belongs to the Capitata group, approaching most nearly P. cernua of Franchet and P. bellidifolia of King (a Sikkim species), both of which have sessile deflexed corollas. It may, however, at once be distinguished from P. cernua by the longer and very differently shaped and distinctly toothed leaves, longer petioles, and smaller flowers. From P. bellidifolia it differs by being a much taller plant, with larger and less hairy leaves, and in having larger flowers with a funnel-shaped not cylindric tube. *J. F. Duthie, Kew.*

LARGE-FLOWERED, SINGLE CHRYSANTHEMUMS.

WE have in Japan a variety of Chrysanthemum with very large single flowers called by various names, such as Taïbo, Itchimonji, Hiramono, or Hironoshi. In the districts of Kiyoto and Osaka there have for some time past been some highly successful growers of this rare variety, of which fine specimens are found. In the neighbourhood of Tokio, on the contrary, it is but rarely grown, doubtless because hitherto with but little success. It is not known when it was introduced, but it has certainly been known for more than a century.

This particular variety requires entirely different treatment from the ordinary kinds. After making certain experiments, we are persuaded that good results may be obtained by adopting special methods of cultivation to this large-flowered sort.

Generally speaking, Chrysanthemums with large blooms develop more fully and bear finer flowers in proportion to the abundance of manure applied to them. This is not the case with the variety in question. The variety Taïbo requires a soil composed of two-thirds of sandy loam and one-third of leaf-mould mixed with a little coarse sand, so that the whole is not too firm. Cuttings or young plants of this variety are put into Bamboo pans full of soil thus prepared. Care must be taken not to place these pans upon the ground, as by so doing, firstly, the outlet of water is checked, and, secondly, earthworms or insect pests might obtain entrance to them. For this reason, at some 4 or 5 inches above the ground, slips of wood or of Bamboo are laid on the soil, and the pans are placed on these, with stakes of thin Bamboo in the pans. Propagation is rarely effected by means of cuttings, although experiments have shown that these give good results. This plant does not root so readily as do the ordinary large-flowered varieties. Multiplication by means of young plants is most frequently practised. As these are, after the fall of the leaves, produced abundantly round the roots the stem is first cut about 2¾ to 3¼ inches above the ground, taken out of the pan, and freed from the soil clinging to it. Half the length of the roots is then cut off, the young shoots growing out horizontally are nipped off, and set in a seed-bed and covered over with a litter of straw. In a cold climate, it is better to keep the plants in frames, being careful not to expose them to a high temperature, or they will grow tall and rank to the detriment of the flowers. In Japan this operation takes place between December 1st and 20th. The plants in the beds, provided with roots and deprived of the sturdy horizontal shoots, are not long in forming young offsets, which appear above ground in the last days of March. That is the time to remove the young offsets from the parent roots and to place them in other beds. It should be noticed that the soil of these beds must be exceedingly light, or the offsets will grow too fast.

If they should develop excessively between the time of planting in the bed and their final position in the pans, an operation which is usually effected in the last fortnight of May, they should be transplanted at once so as to check their growth.

This is an essential matter, and to neglect of it is mainly due the failure of those inexperienced in growing this variety. It may, according to circumstances, be necessary to transplant twice, or even thrice, during the time that the plant is in its temporary quarters. It might be thought more convenient to delay its transmission to the bed, but, in our experience, this plan is not so effectual, transplantation appears to answer better. Finally, care must be taken to plant out finally into the pans only small short offsets with vigorous roots. These pans should be some 8 to 10 inches across, and as many in depth. One plant only should be put into each pot. When the offsets are, in the middle of May, permanently planted in the pans which are at once placed on the shelves, they are once a week given some very weak liquid manure. In early July the manure is withheld until the flower-buds appear; then the fertiliser is given once, but always much diluted. If it were used stronger, the petals would curl and assume an incurved form.

Pinching or disbudding is always practised during growth. At the end of July, or the beginning of August, the top of the main stem divides into two. The two buds on these two shoots must be left to develop and all the others be pinched off, so as only to let two stems grow on each specimen. When flower-buds are formed the crown bud must be nipped off, as this might bear a double flower which would be unsightly, but the second and third terminal buds on the stem may be left to develop, all the others being removed. By this means each plant has two stems which bear four flowers. It is also usual to keep the flower-stems weak, so as to obtain drooping blossoms. In attaching the plant to the sticks, the ties are divided about a foot from the base of the flower-stems, leaving the upper part unsupported, so that it is made to droop.

Before flowering, the plant is brought indoors, or is set out finally in the place prepared for it. The flowers are supported upon discs of stout grey or white paper, set at the end of fine wire, such as is used under strawberries that are to be photographed. Further, it is customary to keep one flower on each stem, which is allowed to hang down beside the one supported as we have described.

We do not know if this variety would be admired by English horticulturists. For our part we consider it deserves a welcome for the beauty of its flowers, the great width of its florets, and the size of the blossoms, which attain a diameter of 12 inches [?]. Further, this plant might aid in furnishing new varieties of Chrysanthemums. For that reason, we deemed it advisable to furnish these notes upon its cultivation, and to forward a photograph of it. [Photograph not received.] *Baron H. Foukouba, Tokyo.*

THE FERNERY.

A NEW FORM OF REPRODUCTION IN FERNS.

RECURRING to my note under the above heading in your issue of January 13, I now send sketch of the plant concerned, and of one of the proliferous fronds, which, considering the undoubtedly unique character of the case, I think worthy of reproduction in your columns. The material now in evidence establishes the further fact that the evergreen frondlets really spring from the rhizome of Cystopteris montana, since the axis of growth (fig. 91, C) which produced them is now throwing normal montana fronds, which, as shown in the sketch, are still associated with two remaining evergreen frondlets (A A) out of the six originally produced. The accompanying sketch of the detached one (fig. 91, 2), which was layered, also shows the two bulbils produced at the sinuses of two of the prothalloid subdivisions, indicating, to my mind, the aposporous character of these evergreen growths. Another detached one layered in the autumn is still as green and fresh as when severed, and although so far without any indications of proliferous growth is, I imagine, extremely likely to produce them later on. The four fresh points mentioned in my previous note are, therefore, fully confirmed, and constitute quite new features in the reproductive history of ferns. *Chas. T. Druery, V.M.H., F.L.S.*

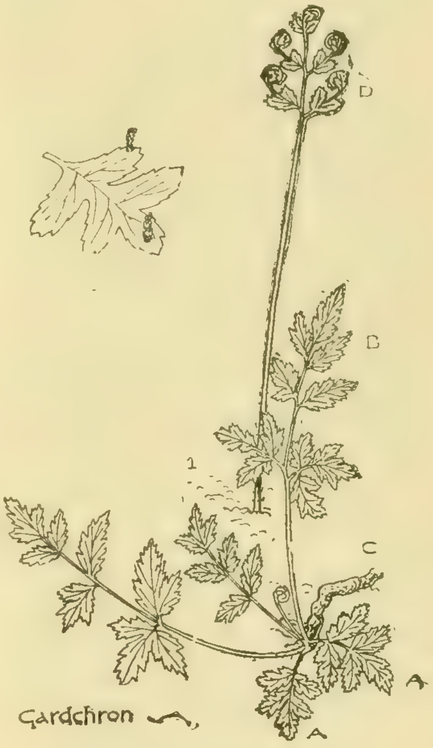

FIG. 91.—CYSTOPTERIS MONTANA.

1. A A, evergreen proliferous fronds springing from C, the caudex; B, normal frond; D, normal frond from end of the buried caudex. 2. Abnormal frond detached with bulbils.

MARKET GARDENING.

FRENCH METHODS IN ENGLAND.

IT was most interesting to me, and doubtless to other readers of this journal, to read the account given by your correspondent, "H. H. S.," on p. 173 of that which he observedin the garden of Mr. Idiens at Evesham.

From long residence in Austria as a gardener in a large place, and observation of the practices

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*Rootstock short, rather stout. Leaves thin, in basal rosettes, 5 to 11 inches long (at flowering time), and about 1 inch in width, narrowly oblanceolate, obtuse or subacute at the apex, tapering gradually into the long winged petiole, more or less clothed on both surfaces with minute white multicellular hairs, especially on the midrib and veins; margins irregularly crenate-dentate, ciliate, teeth with reddish glandlike tips; midrib stout, primary veins conspicuous. Scape much exceeding the leaves, often attaining nearly 2 feet in height. Heads subglobose, about 1 inch in diameter. Bracts 4 to 5 lines long, falcately linear-lanceolate. Flowers crowded, sessile, deflexed, dark blue or rose-purple, with a delicate blue centre, often turning whitish after expansion. Calyx about ½ inch long, divided about halfway down, coated inside and towards the base outside with pale yellow powder; lobes unequal, the three posterior ones broader than the others, and tinged with a very dark purple colour towards the rounded and emarginate gland-ciliate apex, the narrow anterior lobes acute at the apex. Corolla about ½ inch long, funnel-shaped, glabrous; segments cuneate-oblong, with a broadly emarginate apex. Capsule depressed-globose, marked outside with a curious sigmoid pattern.—*Wilson*, n. 4035!

of private and market gardeners about Vienna, Brünn, Presburg, and other large towns, I am qualified to express my opinion that their methods are, in some instances, superior to our own on the score of adaptability of means to an end in the matter of cultivating certain kinds of early saladings, vegetables, etc. Many of the procedures employed are similar to those made use of in France, being probably borrowed in some instances from that country. The good results obtained at Evesham appear to have impressed the Vitry gardener with the suitability of that part of the country for the raising of early salading, mainly Lettuces and Tomatos, and we may suppose other crops likewise, will be found equally manageable and profitable as time goes on.

Should this be realised, we may find French methods being tried in still warmer parts, such as western Sussex, the shores of the Solent, about Christchurch, and in South Devon and the less exposed parts of Cornwall and southern Ireland; the favouring conditions of early cultures, such as a mild winter climate, large amount of sunshine in the spring months, and small elevation above the sea level, the warm, tempting coombes being avoided, owing to their liability to suffer from the invasion of fogs off the sea during spring and early summer. Usually, however, these fogs do not penetrate the country for more than a few miles.

The bellglass or cloches used by the French are much superior in handiness to our handlights; they can be readily wiped dry and made clean and bright for the admission of sunlight, but they want careful handling and cannot be mended if broken, as a handlight can be; still, every garden should possess a few score of them as protectors for Cauliflowers, the earliest crop out of doors, which comes into use in late May and the following month. They are also suitable for the growth of Cabbage Lettuces, to the number of four or five, according to variety under each; the small butter-coloured ones, and those sprinkled with blood-red dots—hardly known on this side—certainly would go five to the cloche. Celery, Celeriac, Mustard, Cresses of various kinds, and a number of half hardy annuals needing protection in the early stages can be raised under them, and for rooting cuttings of hardy plants, cloches are admirable aids. The low glass frames are common in gardens abroad, but they are not the expensive appliances we have here, costing, as I note in the advertisements, £2 for a single light frame, but not more than a fourth of that sum. These frames consist of a two-inch plank at the back and front, the first being 15 inches in height, and the second 10 to 12 inches, thus giving sufficient slope to catch the sun's rays, and carry off the rain. The ends and partitions, if any, are made to correspond to these dimensions. There may be a rafter under each two lights, which is channelled to carry off the moisture, and sometimes rafters are dispensed with. Frames which are employed for forcing purposes are placed over hot-beds of stable litter alone, and in country gardens usually on litter and tree leaves, and these hot-beds are constructed in trenches about 2½ feet deep and 3 feet more in width than the frames that will be placed on them. Thus the heat is conserved to a greater degree than is the case with our frame hot-beds, which are absurdly made 4 feet in height, and wholly above the level of the ground. The plank side of the foreign frame is in the spring and early summer months, if forcing be carried on, banked up with stable litter and tree leaves, and in them Melons, superior varieties of Cucumbers, Pineapples (succession plants and suckers), and Tomatos are cultivated till late autumn arrives.

I have observed Mushrooms and Asparagus grown in these frames very successfully.

Usually the Melon and Cucumber plants are allowed to extend their growths beyond the limits of the frames, both at the front and back—that is, in full summer, the lights being taken away then. The Lettuces in these frames are afforded a bottom heat of about 70°, a night temperature of 55°, and that by day 65°-70°, with as much air as possible whilst maintaining these figures.

Even Germans tire of sauer kraut, after a course of 4 to 5 months' duration, and as a bonne bouche, Savoys and small-growing varieties of the Cabbage are brought on in these frames, the seeds being sown in warmth of 60° in January, carefully kept in full light near the glass, and pricked out into pans or shallow boxes before they get drawn. They form, under frame culture, nice compact heads, which are tender eating, and much appreciated.

The Lettuces are raised in the same careful manner, and afforded the same kind of treatment as the foregoing, avoiding as fully as possible all spindling from too much heat and damping off from excess of moisture in the soil, the affording of air being in this respect a matter of the greatest moment.

I hope these inexpensive methods of forcing with their handy little frames, that any village carpenter could make, which are devoid of screws, nails, and bolts, and are simply held together at each angle with one staple and a wedge, and lights filled in with stout glass, will make way in this country, more especially among small holders of agricultural land.

One good point about them which should not be omitted is that every plant is brought up to within a few inches of the glass, so that "drawing" is unknown with ordinary attention to affording air, taking off early in the day the Russian mats, rush mats, frigi Domo, or what not are used to retain warmth during the night during the colder months, and closing the lights when the sun's heat has sensibly declined after mid-day. *M.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Catasetum, Cycnoches, and Mormodes.—Another section of deciduous Orchids, as Catasetum, Cycnoches, and Mormodes, will require attention as they recommence growth. Shake the plants out of their old compost, and re-pot them in a mixture of peat and loam in equal parts, adding a little leaf soil, chopped sphagnum-moss, small crocks, and silver sand. The ordinary flower pots with 12 inch copper-wire handles attached are preferable to teak baskets or shallow pans. Place a few crocks or some dried pieces of peat-rhizome in the bottom for drainage, and pot them like an ordinary greenhouse plant, leaving about ½ inch of space below the rim of the pot, then finally surface with a layer of freshly gathered sphagnum-moss, which should be packed rather firmly around the base of the pseudo-bulbs. After the plants have been re-potted, suspend them to the roof on the light side of the warmest house, and until the growths are well advanced, and roots are becoming plentiful, exercise even greater care than usual in affording water, as during the earlier stages of growth the young shoots are likely to decay if the soil is made too wet. When the roots have run through the compost, however, and growth is well advanced, abundance of water will be necessary. The plants should first be thoroughly cleansed from all mealy-bug and scale insects, which frequently bury themselves around the base of the pseudo-bulbs, and if not thoroughly eradicated before re-potting is done they will give considerable trouble all through the growing season.

Cymbidiums.—Any plants of C. Mastersii, C. affine, C. tigrinum, C. giganteum, C. Tracyanum, C. lancifolium, and the hybrids, C. Winnianum, and C. Ballianum that require re-potting should be attended to at once. Use rather large pots, and put a few crocks in the bottom for drainage. The compost recommended for the Calanthes will suit them admirably. Other Cymbidiums, as C. Lowianum, C. Hookerianum, C. Schroderi, C. eburneum, C. madidum, and the hybrids C. eburneo-Lowianum, C. Lowio-eburneum, may also be re-potted soon after the flower-spikes are cut, or immediately the plants recommence to grow. All these Cymbidiums should be cultivated in a cool, shady part of the intermediate house, and their immediate surroundings should be kept thoroughly moist at all times; when well-rooted they require an abundance of water at the roots during their season of growth. The new C. Sanderi and C. Sanderæ thrive best in a moist, shady position in the Cattleya house.

Vandas and Renanthera.—Plants of Vanda teres should now be showing their flower spikes, and they require a light position in the Mexican house. V. Hookeriana and the hybrid Miss Joaquim, and V. Marguerite Maron require a similar position in the East Indian house or plant stove. These terete-leaved Orchids should be well syringed overhead several times each day until the end of the growing season. Renanthera coccinea requires similar treatment.

Odontoglossum citrosmum.—The resting season is now over, and the plants are producing flower spikes from the centre of the young growths. Suspend the plants in a light, well-ventilated position in the Cattleya or Mexican house, and afford abundance of water until the growths are fully made up. The proper time to re-pot this species is after the spikes have been cut, while those that fail to flower this season may be attended to when the growths have made a little progress.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Streptosolen Jamesoni is a greenhouse plant, possessing many desirable features; it flowers very early in the year, and continues till the summer is well advanced. If propagated at once, capital plants for flowering early in the following spring may be obtained. Insert the cuttings in sand in the propagating pit, and exercise care to prevent the plants getting starved through being pot-bound, otherwise they will lose a number of leaves. Pots 10 inches in diameter are of a suitable size for the plants to flower in. When growing vigorously the shoots should be stopped frequently to produce neat specimen plants for corridor, conservatory, or greenhouse decoration. A section of the wall in the corridor at Cleveley is at the present time a pleasing feature, each branch of Streptosolen bearing at its extremity 20 to 40 flowers, in the first place of a pale shade of yellow colour, changing afterwards to deep orange-red, a colour but little represented amongst greenhouse flowering plants. When grown in full sunshine the colour in the flowers is better developed, and the effect is charming if they are used for decorating the dinner table. Good fibrous loam, a proportion of leaf mould and sand, with a little dry cow manure forms a suitable compost. Liberal supplies of liquid manure may be given the plants when they have filled the pots with roots.

Potting Operations.—During the present month many plants will require re-potting, and every effort should now be made to push forward this work so that plants thus treated may afterwards have a long season of growth, and an opportunity of consolidating or ripening the growth during autumn. Plants of Allamanda, Bougainvillea, Cleredendron Balfourii, and the shrubby varieties C. fragrans fl-pl, C. fallax, that have been recently pruned, should have their roots reduced in compass and be given a shift into larger pots, or be replaced in pots of the same size in which they have been growing, adding fresh compost of fibrous loam, decomposed manure, and a good proportion of sand. Dipladenias are of weaker growth than the plants just enumerated, and require potting in fibrous peat, adding a little bone meal, and a liberal proportion of sand. All the varieties of Dipladenias (excepting D. Boliviensis) delight in a high atmospheric temperature, a very moist atmosphere, and exposure to full sunshine. Ixoras, if not potted in the autumn, should receive attention now that the atmospheric condition of the stove is conducive to quick growth. In order to make well-furnished specimens the shoots of young plants should be "pointed over" with a sharp knife, or they may be stopped soon after the plants begin to grow.

General remarks.—Seedling Primulas, when sufficiently large to handle, should be pricked off into pans or shallow boxes, putting the plants at about 2 or 3 inches apart. When grown in this manner they are not so liable to suffer from drought as when planted so young into small pots. Another sowing should now be made, and from this plants will flower next spring. The same may be said of Cinerarias to succeed those already sown. Encourage the early Lilies, Marguerites, Gladioli, "The Bride," Calecolarias, &c., by giving them frequent applications of liquid manure. The stock of bulbs and forced hardy plants is now nearly exhausted, and flowering plants for keeping the conservatory gay will not be too abundant during the next few weeks.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Early Vines.—Where pot-vines are grown the fruits will be now commencing to colour, although the weather during the past fortnight in March kept them back considerably, as there was very little sun-heat, and there were cold north-east winds that, blowing on the glass, greatly reduced the atmospheric temperatures in the house. It is not wise to force these vines severely, thinking to make up for lost time, for much better results will follow if they are allowed to develop gradually, and more ventilation is employed, leaving a little on even all night, when the conditions are favourable, for this will assist the colouring of the berries. Vines planted in borders but forced for very early crops are generally grown in narrow borders in small pits. Such borders dry very quickly, and should be given a good soaking with tepid water before the berries begin to colour. Afterwards apply a surface mulching of manure from an old mushroom bed, which will keep the moisture in the border, and also be of benefit to the surface roots. The water-pipes having been kept extra warm during the cold, sunless days, red-spider may be troublesome, and should be checked by syringing the leaves between the branches as much as possible with rain-water. But if the berries are too far advanced for syringing to be practised, sponge the leaves separately with a little sulphur and water.

Latest Vines.—These are now advanced enough for disbudding. If the vines are very old a good proportion of the buds may be removed, retaining those nearest to the base, so that ugly spurs may be shortened later on. Vines grow much stronger and break into growth better when very little if any artificial heat is used at the time they are started, but with the increased sun-heat that may now be expected growth will be more rapid, and a little heat in the pipes at night will be beneficial.

Cucumbers.—The plants being now very vigorous, are liable to produce more fruits than they should be permitted to develop. Stop the growth frequently, and only allow one or two fruits to develop on a shoot. The roots will now need more attention as to watering, for with more top growths they will be more numerous and active. Top-dress them whenever necessary with fibrous loam, decayed manure, and bonemeal, keeping plenty of moisture in the house, and an atmospheric temperature of 68° at nights, allowing it to rise 10° higher during the day.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

A Border of Fragrant Flowers.—In the gardens of to-day, plants having flowers or foliage of sweet perfume are apt to be neglected in the striving after perfection in a colour-design in the mixed border, or in the achievement of more brilliancy in the beds of geometrical form. But, though it may be sometimes necessary to discard sweet-scented flowers to make room for the scentless flowers of richer hue, compensation may be had by devoting a border entirely to fragrant flowers, in which even those of sombre appearance may have a place. This border should be ensconced in a quiet corner of the garden—preferably that portion which is more frequented at evening—for the odours of flowers appear sweeter, and are more readily perceived and more welcome, in the cool of the late evening, when the beauty of the ordinary border cannot be seen. In such a border one could have hardy perennial plants and shrubs, as well as hardy and half-hardy annuals. Foremost amongst them would be the Rosemary and the Lavender, so reminiscent of the associations of old-world gardens, and breathing fragrance over a long period of the year. The Sweet Briar, and some of the old-fashioned Roses, diffusing their peerless sweetness, too, would have their place. The best of the scented Lilies, particularly the Madonna Lily, the clove-scented Carnation, the white Pink, the Lily of the Valley, Balm of Gilead, Sweet Basil, Myrtle, Daphne, Pæony, and the Choisia, all alike would be welcomed here. Amongst the annuals and half-hardy plants for this kind of border the little night-scented stock (Mathiola bicornis) would be one of the best of flowers, and should be sown in broad masses. In the day-time it has a detracting, dead appearance, but in the evening it seems to imbibe new life, and with its faint-coloured pink and lilac flowers and gay foliage looks quite pretty, while it diffuses in the air around as sweet a perfume as it is possible to imagine. The night-scented stock is perennial, but is best treated as a hardy annual and can be sown at the present time. The Mignonette would be another plant admirably adapted for this border, and if properly thinned out when the seedlings are up, to allow them plenty of space to develop, would make a pleasing display as well as give off a delicious fragrance. Sweet Alyssum, Evening Primrose, Sweet Peas, Sweet Sultans, and Wallflowers are other hardy annuals that could be used, while the Tobacco plant (Nicotiana affinis) is invaluable. Seeds of the Nicotiana should be sown in boxes in heat at once—if not already done—and when the seedlings are large enough, prick them off into fresh boxes, giving the plants ample room to grow. They will afterwards need to be hardened off and planted out at sufficient distance from each other to allow of them attaining their natural size untrammelled. Marvel of Peru (Mirabilis Jalapa) though not scented, should find a place in this border, as it is a handsome plant, and its flowers, nearly an inch and a half across, of numerous shades of colour, open in the evening. It is really perennial, but may be flowered as an annual, and if seeds are sown now in boxes in heat and the plants subsequently potted singly into pots containing good, rich soil, should, by the beginning of June, be ready to plant out. Of half-hardy plants Heliotrope, the scented-leaved Pelargonium and Stocks should not be forgotten. On supports of branches or walls the Clematis flammula is delightful in evening, both on account of its shower of white flowers and its wonderful fragrance, but it requires to be established a year or two before it is effective. The different Honeysuckles, too, might be used thus, while for the walls alone the lemon-scented Verbena (Aloysia citriodora), Umbellularia californica, odorous Jasmine, and the Wistaria are indispensable

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Peaches and Nectarines.—Draw down the blinds each evening over those trees that are now in flower, and remove the blinds very early next morning if there is no frost. Examine the trees closely each day to see if any aphis is detected; take means at once to exterminate it, or at this season it will spread very rapidly. Use a sprayer or fine syringe, and apply a solution of quassia extract, which should be mixed in water at a temperature of about 70°. Spray every portion of the tree, and repeat the operation on several successive mornings; more especially should this be done when the trees have finished flowering. For some time afterwards they should be syringed with quassia or XL-all insecticide twice weekly. If mildew be detected, spray with sulphide of potassium, or dust the leaves with flowers of sulphur.

Apricot trees as they pass out of flower should also be carefully watched, as they are liable to be attacked with maggots. As soon as the foliage appears, the maggots commence to feed upon it, and have a peculiar habit of tying the leaves together, which prevents the shoots growing away strongly. Let all the maggots that can be detected be picked off, and afterwards spray the trees with strong extract of quassia. Continue to draw down the blinds over the trees as a protection from frost. Newly planted trees may require to be thoroughly watered at the roots. Let this be ascertained before they suffer from drought, and immediately after affording water let a mulch be applied.

Grafts.—Attend to newly grafted trees and see that the grafting material is intact. If drying winds and hot sunshine prevail, tie some damp moss over the clay to prevent it cracking, and spray this gently on fine mornings.

Strawberry Plantations.—Keep these clean from weeds, and take care that young plants are made firm in their respective positions, should these become loosened by the influence of frost or other means. Afford water to the roots if this is necessary, and prevent the plants becoming attacked with red spider.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Beet.—More often than not these roots are grown too large in size, for few vegetables lose their good qualities through being overgrown more than Beet. Extra size is generally the result of sowing the seed too early, and in ground that is too rich. The end of the present month or the first days in May is a good time to sow for the general supply, but small sowings may now be made on a warm border for providing Beet for use in early salads, choosing the turnip-rooted variety, which matures quickly. It is necessary to pull beet as soon as it has attained to a serviceable size, and bury the roots in moist soil, otherwise during warm weather they will lose colour, and the roots when boiled will be hard. "The Globe" is a good type for the purpose mentioned. Deep, loose soil is necessary for the main crop. The same cultivation as applied to Carrots will suffice. The varieties I have found to be best are Cheltenham Green Top, Sutton's Blood Red and Carter's Perfection, while if a darker fleshed variety is wanted, Dobbie's Selected is one of the best.

Salsify and Scorzonera.—These crops also suffer from too early sowing, and it is well to make two sowings in case the earlier one should "run to seed," and the good qualities of the roots be thus lost. Sow the first seeds in the last week of April, and make the next sowing a fortnight later.

Chicory requires the same treatment as I have just described. It is extremely useful for salads, and may be easily forced throughout the winter. Allow the seedlings plenty of room to develop to their fullest extent.

Seakale.—There should be no further delay in covering up the crowns that are intended to afford the latest supply in the open. If the ground is dry, afford the roots a good watering, then apply leafmould to the depth of two feet and protect this from the birds, or they will scatter it about. Complete the plantation of Seakale intended for next year's supply without further delay, and as soon as the young growths are large enough, thin them out to one which will be much more useful than any greater number.

Planting Out.—There should be no fear of any great damage being done by frost to young plants of Cauliflowers, Cabbages, Sprouts, etc., that were raised in January, and are now ready for being put into the open ground. In exposed gardens, however, it is well to place a few Spruce boughs amongst them to break the winds. As a protection from slugs, a few coal ashes may be put round each plant. Wood pigeons are often very destructive at this season, as well as rooks, and beyond netting the square I know of nothing more effective to keep them at bay than a stuffed cat strung from the back on to a wire.

THE APIARY.

By Chloris.

Renewing Foundation.—There is an idea prevalent among bee keepers that so long as the combs are straight, and are not pollen-clogged, there is no necessity to renew them. This is altogether erroneous. A little while ago a young man, who is new to the art of bee keeping, was holding forth to his elders on this very point. He pointed out that on examining old combs he had found that when a bee had hatched it left a scale behind it, and thus reduced the cubical space of the cells. None would credit it. A piece of old comb was produced and examined, and all were perfectly convinced, for quite 1-32 of an inch of the base of the cells was so occupied with scales or, really, cocoons. This is a matter needing urgent attention, for, by continually using the same combs a smaller race of bees results. There is also another point needing a little thought and consideration. The old skeppists are all of opinion that foul brood was less frequent when the bees made fresh comb each year in the sulphuring days. This may be so, and deserves very serious attention by all who have bar-frame hives. After reading this some may become alarmed and wish to renew all the foundation; but if half the frames are renewed annually that will suffice. It will be well to feed the bees during the renewing period by placing the syrup over the empty sheet of foundation.

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Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	April 16	Bank Holiday.
TUESDAY,	April 17	Roy. Hort. Soc. Coms. meet with Nat. Auricula & Primula Soc. Show combined.
WEDNESDAY,	April 18	Roy. Bot. Soc. Show at Regent's Park.
FRIDAY,	April 20	Kent and Sussex Daf. and Spring Fl. Show at Tunbridge Wells.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick—48·4°.

Actual Temperatures:—

London.—*Tuesday, April* 10 (6 p.m.): Max. 65°; Min. 37°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Wednesday, April* 11 (10 a.m.): Bar., 30.3; Temp., 57°; *Weather*—Bright sunshine.

Provinces.—*Tuesday, April* 10 (6 p.m.): Max. 59° Colchester; Min. 47° Liverpool.

SALES.

WEDNESDAY—

Herbaceous and Border plants, Lilies, Carnations, Roses, Palms, and plants, Azaleas, Rhododendrons, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY—

Imported and Established Orchids in varieties, Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Surinam. Dr. A. Pulle, of Utrecht, has recently published, through M. J. E. Brill, of Leiden, an "Enumeration of the vascular plants known from Surinam, together with their distribution and synonymy." The proximity of Dutch Guiana to our own colony of British Guiana, and the similarity of its climatal features render the book very valuable as, at present, we have no complete or separate list of the plants of Guiana, hence the present work may, in a measure, act as a substitute. We are told, however, in the appendix that the climate of the known part of Surinam agrees more closely with that of French Guiana and the lower course of the Amazon, and is chiefly distinguished by the very regular distribution of the rainfall and the temperature over the whole year. The more varied surface of British Guiana ensures the presence of a larger and more varied flora. The work is written in English, and is prefaced by some historical notes. Of the many establishments wherein Surinam plants are preserved that at Utrecht is the most important. The order adopted in the present work is that of Engler and Prantls' *Natürliche Pflanzenfamilien*, so that it seems strange at first sight to see the Orchids placed next to the Piperaceæ, but this collocation is, of course, easily explicable. The Orchids, by the way, are numerous (142 species), but mostly "little conspicuous." They would probably have been enumerated in greater numbers could the author have had access to Reichenbach's herbarium, shut up in Vienna. The country near the coast is an alluvial flat, which extends for some distance up the rivers, the low banks of which are covered with a dense and very rich vegetation. The trees flower comparatively seldom, but are often covered with Bromeliads and climbing plants (Convolvulaceæ and Bignoniaceæ). Palms also are numerous. Above the river banks are elevated plains or savannahs rather sterile, owing to the erosion caused by the great rainfall which washes away the nutritive ingredients of the soil. In the south low granite hills occur, with rapids and waterfalls along the course of the rivers. The rocks here are often covered with curious Podostemaceæ. Ferns, are, of course, common in the damp atmosphere. But the chapter devoted to the general characters of the vegetation must be read by those interested—it is impossible to summarise it satisfactorily, so interesting and full of detail is it. Altogether upwards of two thousand species are enumerated, but there is good reason for believing that this number will be largely increased as the country becomes opened up. As it is, it appears that the flora of British Guiana is better known than that of Surinam, although that has been more fully investigated than that of French Guiana. The number of endemic species is no less than 293 = 14 per cent., in this respect agreeing with the floras of British Guiana and of the Amazon district. Some 17 plates and a map illustrate the text, and there is a complete index. The fact that large tracts are still botanically unexplored, and the extreme difficulty experienced in obtaining the flowers and fruits of the trees, render it certain that future researches will largely add to the number of plants known to inhabit Surinam, but in any case Dr. Pulle has earned the gratitude of all present and future investigators by this carefully elaborated enumeration.

Supplementary Illustration.—Debregeasia velutina.—This, to us, somewhat uncouth name, belongs to a stove plant exhibited recently at the Royal Horticultural Society by Messrs. James Veitch & Sons. It is a near ally of the Nettles, and has even closer relationship to the Mulberries; in fact, the yellow fruits which constitute the chief value of the plant, from a decorative point of view, are in form precisely like Mulberries, although in colour, and we may add in flavour, they differ. The species are natives of India, Malaya, and Abyssinia. Ropes and twine are made from the fibre of some allied species according to Collett. D. velutina, the species figured in our Supplementary Illustration, is very widely distributed throughout India and Ceylon, and is a tall shrub with hairy surface and shortly stalked, oblong, lanceolate, rugose leaves. The plant was named and figured by Gaudichaud in his Botany of the Voyage of the "Bonite," t. 90, and is fully described by Sir Joseph Hooker in the Flora of British India, Vol. v. (1890), p. 590.

Midland Daffodil Society.—At a committee meeting held on April 3, to consider the dates of the exhibitions, it was decided to adhere to those stated in the schedule, namely, Wednesday and Thursday, April 25th and 26th. As our readers are probably aware, the Birmingham Daffodil Exhibition is one of the finest in the Kingdom, and is visited by specialists from all parts.

Small Holdings.—The Departmental Committee held a sitting on the 4th inst. Evidence was given by Mr. R. N. Sutton Nelthorpe, Scawby, Lincolnshire; Mr E. Spencer, hon. secretary of the Scawby (Lincolnshire) Credit Society; Mr. Jas. Bowes, Scawby, Lincolnshire; and Mr. W. M. Tod, chief organiser of the Agricultural Organisation Society.

Royal Horticultural Society.—We are informed that the Council has decided to hold a trial of Cannas at Wisley this year and next. Roots should be addressed to the Superintendent, Royal Horticultural Society's Gardens, Wisley, Ripley, Surrey. Foreign horticultural papers please copy. The next meeting of the Committees will be held on Tuesday, April 17, in the Society's Hall, Vincent Square, S.W. A lecture on "Colour-Photography in Horticulture," illustrated by lantern slides, will be given by Mr. F. Enock at 3 o'clock p.m.

The Calcutta Show.—The Horticultural Club of India, which originated with Mr. S. P. Chatterjee, held on the 7th ult. an inaugural show in his nursery, which was lent for the purpose. We learn from a report in *Indian Gardening* that the exhibition was an unqualified success. Mr. Chatterjee's own collections elicited the highest commendations.

"The Fern Paradise."—We are informed that Her Majesty the Queen has accepted from Mr. Francis George Heath a copy of his *Fern Paradise.*

Potatos in Shropshire and Staffordshire.—According to the report of field experiments, made under the auspices of the county councils, the heaviest yield per acre was contributed by Factor, viz., 14 tons 7cwt.; Royal Kidney yielded 12 tons 17cwt.; Up-to-Date, 11 tons 4cwt. The lowest on the list of nine sorts was Evergood, which only produced 3 tons 10cwt. These were all grown on loamy soil and manured with farmyard manure and artificials, as follows:—Sulphate of ammonia, 1¾cwt.; superphosphate, 4¼cwt.; and sulphate of potash, 1½cwt. per acre. In connection with the Potato experiments at Orton and Cresswell, Staffordshire, the attention of farmers is called to the following varieties:—The Factor, Cramond Blossom, Discovery, and Superlative. The Factor is of fine flavour when cooked and an average cropper. All the varieties suffered from disease when lifted, except Discovery, which is a late Potato of good quality. At Hilderstone the whole crop was about one-third lighter than in 1904. This was due, it is said, to the seed not being obtained directly from Scotland. Farmers are advised to obtain a change of seed each year, and to get it from as far north as possible. Last year the largest yield of Potatos at this centre was 17 tons 4cwt. 3qrs. per acre, but in the present season (1905) it was only 12 tons 14cwt. 1qr.

Lord Kitchener as a Prize-winner.—We learn from *Indian Planting and Gardening* that the Commander-in-Chief in India was successful in obtaining the cup presented by Seth Dooly Chand at the Calcutta show, for the best and largest collection of Dendrobiums, tastefully arranged with Ferns and Palms. We trust his excellency may never have occasion to enter into any more serious competition, but that if he does he may be equally successful. From the same source we learn that a special prize was awarded to Sheik Sadar, the head Mallee of the Royal Botanic Gardens, Calcutta, in recognition of his meritorious services to horticulture and his long service—over 40 years in the garden.

The Horticultural College, Swanley.—The report, to the end of 1905, is distinctly encouraging. The students, now wholly women, marked their progress by obtaining various diplomas and certificates, and many found important appointments on completing their course of instruction. We note that during the year several students passed through the Colonial Training Branch and afterwards left to fill the positions for which they had fitted themselves.

The Natural History of Selborne.—By the Rev. Gilbert White, M.A. Re-arranged and classified under subjects by Charles Mosley (London, Elliot Stock, 62, Paternoster Row, E.C.). Here is our old friend, familiarly called "White's Selborne," sent out in unfamiliar guise. Notwithstanding the existence of nearly a hundred editions of this popular favourite, the editor has seen fit to issue yet another "arranged not strictly in the form of letters as they left the author's pen, but according to the species described therein, so as to be more convenient for reference by the students, whilst at the same time not detracting from its interest to the general reader." These are Mr. Mosley's words: perhaps the ever-fresh public to whom classic books come new may agree with them, but save for reference, the present edition seems bereft of much of the charm of the original. The long and chatty letters have been cut into paragraphs, as it were, and then arranged according to their subject-matter. The plan would appear better suited for application to a more formal or strictly scientific treatise, as the pleasant letters and nature-notes were never intended for this close comparison and inspection. The editor gives us a useful index, but no illustrations in the text. The frontispiece is a facsimile reproduction of that to the first edition of the work, published in 1789.

Nature Study in Chester.—The Chester Society of Natural Science, Literature and Art (founded by Charles Kingsley, 1871), is offering prizes and certificates for nature study to boys and girls residing in Cheshire and North Wales. The competitors are to describe wild-flowers from fresh and dried specimens, to report on certain insects, record observations upon such subjects as weeds, birds and pond-life, and to submit photographs taken by themselves. Full information can be obtained from Messrs. George P. Miln & W. Shepheard, the general secretaries, Grosvenor Museum, Chester.

Perennials.—A useful penny pamphlet sent out by the Agricultural and Horticultural Association, Long Acre, W.C., and written by experienced authorities. This is a second edition of the fifth of a series of these handbooks and should prove increasingly acceptable. There are plenty of pictures; the editor is Mr. Edward Owen Greening, and Mr. T. W. Sanders is responsible for most of the letterpress. It will be understood that the directions given are clearly expressed and useful for reference to both professional and amateur gardeners—in fact, to "one and all."

Seed-vessels of the White Lily.—The rarity with which capsules and seeds of the Madonna Lily (L. candidum) are produced is well known. As long ago as the time of Gesner it was the custom to cut the flower stems off level with the ground, and then hang them up in a reversed position in a well-lighted situation. When the ovary swelled, a capsule was formed, and the seeds ripened. Various French writers describe a similar process. Another method of inducing fructification depends on the removal of the scales of the bulb and the bulbils, leaving the central flower-bearing stem, which in time produces capsules and seeds. Naudin, in 1863, noticed in a bed of white Lilies, intermixed with Lilium testaceum, some which produced capsules, Other cases of the same kind are cited in an article in the *Revue Horticole*, by M. L. Henry, from which we take these details. Further, M. Henry tells us that in 1904 two clumps of this Lily were planted, separated from each other by a space of 5 to 6 metres, with a similar clump of Lilium testaceum midway between the two. In 1905 the white Lilies produced a considerable number of seed-pods, some of which ripened and produced seed. One of these capsules is figured in the *Revue Horticole*, 1906, p. 159, fig. 75. The question arises whether the proximity of Lilium testaceum had any influence in determining the fructification of the white Lily? In the coming season it would be easy to determine this point by fertilising L. candidum with the pollen of L. testaceum. The last-named Lily also rarely produces fruit, though in the *Garden* for 1887, pp. 194 and 394, instances are mentioned where it had done so when grown in the vicinity of other Lilies—as if it, also, required to be pollinated with foreign pollen.

American Universities.—The American Ambassador has been telling the inhabitants of Bristol, who are desirous of founding a University in that city, that his countrymen looking to the practical requirements of the nation are more and more developing their Universities in the direction of science and its practical applications. The Leland Stanford University of California has an endowment of between seven and eight millions of pounds, the gift of one man and his wife; next comes Colombia with more than six millions, Harvard with five and a half, Chicago with nearly four millions and Cornell with about three millions, Yale has only two millions, the Carnegie Institute of Washington a like sum. The State of New York alone spent in 1905 nearly nine million pounds on its schools.

Conifers in Britain.—Mr. Hatfield tells us in *Horticulture* for March 24, of his disappointment in relation to these trees in Britain. He visited several of the well-known Pineta, not excepting Murthley, and sums up his article: "In all the places put together, I did not see as many species and varieties of Coniferous trees as at Wellesley (Massachusetts), nor as fine specimens." The writer appears to have been better pleased with the Edinburgh exhibition, of which he says, "It was the finest show I have ever seen anywhere."

Potato-Haulms with Tubers.—M. Blaringhem in the *Revue Generale de Botanique*, 1905, p. 501, attributes the formation of tubers in the axils of the leaves to the action of the bind-weed, Convolvulus arvensis, which constricts and even breaks the stems at their base, and thus disturbs the nutritive functions of the plant. This is another illustration of the view often set forth in these columns that the aerial tubers are the result of some injury to the subterranean portions.

Edinburgh and East of Scotland College of Agriculture.—On March 30 the medals and certificates gained by students attending the winter session of this college were presented in the college buildings, George Square, Edinburgh, by Professor Wallace, in the absence of the president and vice-president, from whom apologies were intimated. Amongst the successful students we notice the name of Robert L. Scarlett, son of Mr. James W. Scarlett, Market Gardener, Swinthope, Inveresk, whose record is very creditable.

Winter-Flowering Carnation Society.—We are informed that at a meeting recently held of the committee appointed to make the preliminary arrangements for the formation of a Winter-Flowering Carnation Society, correspondence that has passed between Mr. Henwood, hon. secretary of the National Carnation and Picotee Society, and Mr. Hayward Mathias, hon. secretary of the Winter-Flowering Carnation Society, was read. It appeared from the correspondence that Mr. Mathias had, prior to the formation of the Winter-Flowering Carnation Society, definitely offered to give way to the National Carnaton and Picotee Society in the event of that society wishing to deal with winter-flowering Carnations also. The matter of taking up winter Carnations was accordingly brought before his committee by Mr. Henwood, and Mr. Mathias was informed on January 5, 1906, "that it was the unanimous opinion of the members (of the National Carnation and Picotee Society) present, that the society was not in a position to do so." To make the matter perfectly clear, Mr. Mathias again wrote to Mr. Henwood on January 12, 1906, to say that now he had received an official refusal he felt himself at liberty to bring the desirability of a society in the interests of winter-flowering Carnations before those who desired to see this section recognised. The committee wished publicity to be given to this correspondence in order to remove any possible misapprehension on the part of those interested in winter-flowering Carnations. The committee decided that the first general meeting of the society should be held at Anderton's Hotel, Fleet Street, London, on May 29 (the opening day of the Temple Show), at 8 p.m., to be preceded by dinner at 7 p.m. The minimum subscription for members is 5s. per anuum.

Frederick Townsend.—The *Journal of Botany* for the present month contains a portrait and a biography of Mr. Frederick Townsend, who died at Cimiez, on December 16, In later life he succeeded to the family residence, Honington Hall, Warwickshire, where he formed a beautiful and interesting garden. Mr. Townsend, who was born in 1822, was an occasional correspondent of this Journal and was well-known as an acute botanist.

Kew Bulletin.—No. 1 for 1902, the publication of which has been delayed till March, 1906, contains an article on Paspalum dilatatum as a fodder grass, and an elaborate memoir on Chinese Ginseng (Aralia quinquefolia). Many varieties are described by Mr. Burkill. Though discarded as useless in Europe and America it is still regarded in China as the panacea for almost all ills. Khasia Patchouli forms the subject of a note by Col. Prain, now Director of the Royal Gardens, Kew. The cultivation of Woad in England as illustrated in these columns in 1881 and 1882 is also treated on, and there are various miscellaneous notes which the progress of time has rendered out of date. —— The second number for 1906 contains a revision of the genus Hemileia by Mr. Massee, who also contributes notes on some new and additional species of Fungi occurring in the Royal Botanic Gardens.

Publications Received.—*The Generic Concept in the Classification of the Flowering Plants.* By B. L. Robinson. Address of the Vice-president of Section G. (Botany) at the New Orleans meeting of the American Association for the Advancement of Science.—*The Photographic Monthly*, April. This is indeed practical and pictorial, giving a good idea of the aid the camera can be to botany and nature study generally.—*Fourteenth Annual Report of Gardening Instruction under the Worcestershire County Council* for 1905. Mr. James Uvedale records the work of a highly successful year. Numerous experiments on fruit, Potatos, and other crops, and on plant diseases, were undertaken, and the photographic illustrations form a useful register of the results obtained.—Ontario Department of Agriculture: *Twelfth Annual Report of the Fruit Experiment Stations.* Drawn up by Mr. Linus Woolverton.—Also: Bulletin 147: *Fruits Recommended for Planting in Ontario*; and *Twenty-seventh Annual Report of the Ontario Agricultural and Experimental Union,* 1905. Contains useful papers and record of constant progress.—University of California; College of Agriculture: Agricultural Experiment Station: Bulletin No. 172. *Further Experience in Asparagus Rust Control.* By Ralph E. Smith. And Bulletin No. 173: *Commercial Fertilizers.* by George Roberts.—U.S. Department of Agriculture: Division of Entomology. Bulletin No. 57: *Report on Miscellaneous Cotton Insects in Texas.* By E. Dwight Sanderson.—*Farm and Stock Year-Book.* Important for farmers in the eastern province of the Cape Colony. (Port Elizabeth Eastern Province, *Herald* office.)

TREES AND SHRUBS.

THE CHINESE MAGNOLIAS.

The genus Magnolia, considered as distinct from Michelia, Talauma, and Manglietia, comprises some 25 species, 17 of which are Asiatic and eight American. Of the Asiatic species, India, Assam, and Malaya claim six, Japan five, and China four. Of the two remaining, one is common to China and Japan, and the other to China and the Himalaya. It is with the six species which occur in China that I propose to deal here.

MAGNOLIA CONSPICUA, Salisbury.

This old favourite was introduced into this country by Sir Jos. Banks, in 1789, and is too well-known to need much comment. In China it is widely spread, but owing largely to the destruction of the forests it is becoming very rare. In the Central and Western Provinces it occurs at an altitude of between 4,000 and 6,000 feet; but seldom ascends above this altitude. Large trees are seldom met with, though I have a vivid recollection of one or two giants, 80 feet or more high, with enormous trunks and widely spreading branches. One such tree I saw in full flower early in May, and if it bore one flower it bore ten thousand. The flowers are often flushed with pink, and a wild form occurs (and has been introduced) which is remarkably like the plant known in gardens as M. Soulangeana. The fruit of this species is spindle-shaped, often 8 inches long, and very characteristic. The bark, known as "Wu P'i," constitutes an important drug, being valued by the Chinese as a tonic and stimulant. This species, under its native name of "Yulan," has been long cultivated by both Chinese and Japanese, and is one of their most-prized flowers. Several hybrids between this and M. obovata have been raised and are cultivated in our gardens.

M. DELAVAYI, Franchet.

This is a new species, first discovered by the late Père Delavay in Yunnan, south-west China. It forms a much branched, flat-topped, evergreen tree, 20 to 30 feet high, but often occurs in flower in a bush state. Leaves with long petioles, ovate, acute, 8 to 14 inches long, 5 to 7 inches wide, coriaceous, metallic green above, glaucous beneath, young leaves bronzy. Flowers of medium size, erect on short stalks, white, cup-shaped, fragrant, with very fleshy petals; the flower-buds are very acute. Fruit, a large cone, 6 inches long. This species bears a general resemblance to M. grandiflora, and may be regarded as the Asiatic representative of that species.

M. Delavayi is widely spread in Yunnan, but does not occur in Central or Western China. It affects shrub-clad mountain-sides, between 4,500 to 7,500 feet. In 1899, when travelling through Yunnan in the interests of Messrs. Veitch, I succeeded in obtaining seeds of this plant which resulted in its introduction. Unfortunately it has not proved hardy around London, though it thrives on a sheltered wall. Its hardiness is apparently about equal to that of the Himalayan M. Campbelli.

M. GLOBOSA, Hooker and Thomson.

This is a most interesting addition to the Chinese flora, having hitherto been known only from Sikkim. In the woods and forests of the Chino-Tibetan border, between 7,000 and 8,500 feet in altitude, this species is not uncommon, and it extends as far north as lat. 32° 30′. When I first discovered it I thought I had got hold of a new species, but I am satisfied that it is only the Sikkim plant, which, however, until now has not been introduced. The only differences between my specimens and those gathered in Sikkim by Sir J. D. Hooker in 1849 are that the leaves in mine are more narrow and more silky beneath, with no tendency to be glaucous, and the wood is purple, not straw-coloured. This species forms a bush or small tree 6 to 15 feet high, and flowers in quite a small state. Leaves deciduous, ovate or ovate-elliptic, acuminate, 5 to 9 inches long, 3 to 5 inches wide, membranous, nearly glabrous above, and covered beneath with a dense felt of silky hairs, which are of a brown colour on the primary veins. The leaf and flower-stalks are short, and covered with long, brown, silky hairs. Flowers solitary and terminal, appearing with the leaves in late May and June, white, saucer-shaped, and fragrant; stamens and pistil of bright red colour. Fruit oblong, pendulous, 2 inches long.

In many respects this species resembles the Japanese M. parviflora, but the flowers appear somewhat earlier. From the altitude at which it grows there can be no question but what this species will be perfectly at home in this country.

M. HENRYI, Dunn.

One of Dr. Henry's most remarkable discoveries, but not yet introduced. It forms an evergreen tree, 20 to 25 feet high, with huge coriaceous, oblong, acute leaves, 20 to 24 inches long, 7 to 8 inches wide, very strongly veined on the under side. Flowers borne on long stalks, rather small, white, saucer-shaped, with very thick fleshy petals. Fruits 6 inches long, cylindrical, and suggestive of those of M. Campbelli. This very striking plant is a native of the forests around Szemao, in south-west Yunnan, occurring at an altitude of 4,000 feet, but is very rare. It does not appear to be closely allied to any known species.

M. HYPOLEUCA, Siebold and Zuccarini.

This handsome species is common to both China and Japan, though it would appear to be much more abundant in the latter country. In Central and Western China it is common enough around dwellings between 2,500 and 4,500 feet in altitude, but I have no recollection of seeing a spontaneous specimen in the forests. The Chinese designate it the "Hou p'o" tree, and its bark and flowers constitute a valuable drug, which is exported in quantity from Central and Western China to all parts of the Celestial Empire. This species flowered in this country for the first time last summer, and is now getting fairly well known. It was apparently first introduced into this country from Japan in 1884 by B. C. Chambers, Esq. Its habit is erect, with loosely-spreading branches, and its huge leaves are somewhat remote from one another, the bark grey and smooth. The largest tree I met with did not exceed 40 feet in height. Leaves deciduous, obovate, 16 to 20 inches long, 8 to 10 inches wide; glaucous-green below, and covered with scattered hairs, which are more abundant on the principal veins. Flowers white, powerfully scented, 6 to 8 inches across; stamen-filaments and carpels bright red. The flowers appear in late May and June, when the leaves are three-parts grown. The fruit is an enormous cone, 6 to 8 inches long, until ripe of a bright red colour, and being erect it forms a conspicuous object at the ends of the branches. I doubt if any difference between the Chinese and Japanese forms will be found, but plants of the former, raised from seeds I sent home, are now growing in Messrs. Veitch's Coombe Wood nursery.

M. OBOVATA, Thunberg.

Introduced into this country in 1790 by William Henry, Duke of Portland, this species is widely grown. In Central and Western China it is very rare, occurring in woods between 4,000 and 5,000 feet. I only met with one or two small trees, and my specimens are the only localised spontaneous ones from China in the Kew Herbarium. The flowers of this species appear before the leaves, and are distinguished from those of its near ally, M. conspicua, by being less cup-shaped, and reddish-purple in colour, with stamen-filaments, and carpellary column much shorter.

As mentioned previously, hybrids between this species and M. conspicua are in cultivation. Of these perhaps the following are the best known: M. Soulangeana, M. Lennei, M. superba, and M. Norberti. *E. H. Wilson.*

SOME SPECIES OF ILEX.

It is sometimes said that Ilex latifolia is not hardy, but here in these gardens are some fine specimens, several of which are 25 feet high, and they fruited profusely during last season. I. latifolia is a Japanese species, and is peculiarly ornamental. It has leaves 8 to 12 inches long, with prickly, serrated edges. It has no protection here, and is planted in several (four) different sites in different soils and elevations, and all are thriving unmistakably.

Ilex cornuta, the horned Holly, is a very handsome and distinct species. The leaves are about four inches long, and are furnished with strong spines at the end with sharp points which resemble horns. The plant makes an excellent specimen if isolated. Our plant is about eight feet in diameter, and is kept pruned.

Ilex crenata is also decidedly distinct. It has small shining leaves of a dark green colour, and as an evergreen shrub in mid-winter it is most useful. This variety is sometimes called the Japanese Holly. *W. A. Cook, Leonardslee Gardens, Horsham.*

THE SPECIES OF ELÆAGNUS.

Special attention has been called to this group within the past few years, and undoubtedly this typical genus of the natural order Elæagnaceæ will prove a valuable acquisition. It is a genus of elegant and interesting plants suitable for every kind of soil and garden. There are only very few really striking variegated shrubs, and the genus Elæagnus furnishes one of them. It surpasses the Ligustrum in beauty of colour, the Ilex and Aucuba in growth, and yet is uncommon. Not only are the Elæagnuses very attractive by the beauty of the colour of their leaves, but the wood, fruits, and growth are also very fine. And although the simple flowers are not large, in one or two species they are borne in sufficient profusion to make a good show; while, in addition to being deliciously sweet, they appear mostly in early winter, and their scent is also remarkably attractive.

Nearly all the Elæagnus have proved themselves hardy in our climate, and they are all nearly or quite evergreen. Some—the dark evergreen varieties—may be treated as other evergreen shrubs or trees. Others—the varieties with coloured foliage of the greatest beauty—have to be treated otherwise. A variegated plant, to be of real value in the garden, must have clear, bright, and abundant red and yellow or white markings, not dotted or merely marked with colour. At the present time so very many poorly variegated shrubs are offered that lovers of gardens would be wise to see first what they are buying and buy the best. They should not be planted here and there among mixed masses of evergreen and deciduous species. There are two ways in making an excellent use of variegated evergreens or variegated half deciduous shrubs. In the first place, they may be made into a cheerful bit of outdoor winter garden. Even a very small space of well-arranged planting of these beautifully variegated shrubs, so as to produce a few broad masses of colour, has a surprisingly cheery effect in winter, making a kind of sunlight of its own when skies are dull and grey.

Secondly, we can use them by themselves as large well-shaped specimens. Though the species in cultivation are several in number, only some of them may be looked upon as to include all different forms and need description.

Elæagnus pungens.—This is an ornamental evergreen growing to a height of 6-8 feet in any ordinary soil. Its leaves are about 3 inches long, bright green above and silvery below. At a certain age it shows very sweet flowers in early winter; their Gardenia-like scent is most attractive. Its native country is China. There are several other evergreen species, classified as E. glabra, E. macrophylla, and E. reflexa, which so closely resemble each other as scarcely to be entitled to a separate description.

I have made it a special object of late years to find out the best way in which to propagate this species and its several handsome variegated forms. Though propagation may be successfully effected by seeds, layers, or cuttings, the surest and shortest way is that of grafting. "Grafting between the bark" in the propagation cases, with an atmospheric temperature of 65° to 70° Fahr., just before the growth finishes in August. For this purpose the stocks—E. edulis from seeds being the best for this—have to be potted in the previous winter. Gradually the grafts get hardened off and are planted out in spring and make in two years nice little shrubs. In France I saw them grafted outside, only covered by bell-glasses.

E. pungens glauca and *E. pungens variegata* are good varieties of the species already mentioned, and may be propagated similarly.

E. longipes, syn. E. multiflora.—A Japanese species. It grows from 2 to 3 feet high, with numerous slender branches, which are covered with brown, rusty scales. The leaves are thick, dark green above and silvery-white beneath. Its fruits are showy and ornamental, and are of bright red colour, covered with small white dots. It affords a beautiful contrast to the colouring of the foliage. This Elæagnus may well be grown for the fruit only, as it is juicy and has a sharp but very agreeable flavour. This, as all other Elæagnuses, should have the surplus branches thinned out yearly, thus giving them a more graceful appearance. This form is best propagated by winter cuttings.

E. angustifolia, syn. E. hortensis, is a native of south-eastern Europe and western Asia. It is the Wild Olive of the classic authors. It shows yellow flowers in midsummer, and the oblong, light-coloured fruit appears in autumn. In mid-Asia it is largely grown by the natives in orchards for its fruit. The species should be propagated by grafting or cuttings from half-ripened wood in the cold frames or under bell-glasses.

E. argentea, syn. Shepherdia arg.—A native of North America, where it is known as the "rabbit berry." It grows from 10 to 15 feet high, and is of slender proportions, with opposite ovate or oblong leaves, very beautiful silvery-white on both sides. The branches are covered with grey bark, the whole contrasting pleasantly with trees of darker shade at the background. Its bright yellow flowers are produced in compact clusters in April and May. The fruits which follow are even more beautiful. They are scarlet or crimson, and hang in bunches, sometimes almost covering the entire tree or bush, and contrasting with the white coloured foliage to great advantage. The berries have an agreeable flavour. The method for propagation is grafting as described.

E. Simoni variegata.—A most handsome variegated form of the E. Simoni of Chinese origin. This variety is said to have originated in Belgium, and when I was there it was looked upon as a most valuable addition to the genus. The leaves are variegated with dark green, have golden-yellow centres, shaded into brown, and maintain these peculiarities almost the entire season.

E. Simoni tricolor.—This possesses a very charming leaf: dark green, brilliant yellow and pure white mixed.

Other very good varieties are E. japonica marginata, E. japonica variegata, E. japonica argentea, E. crispa, a beautiful Japanese species, E. maculata aurea, E. pungens alba marginata, as its name implies, with dark green leaves elegantly white bordered. *F. J. Longhouse, Neston.*

MODERN MICHAELMAS DAISIES.

Perennial Asters contribute largely to the beauty of the flower garden in autumn, and are valuable as pot plants in the greenhouse. Modern varieties are much in advance of those in cultivation a few years since. The modern type of these flowers possesses a drooping or a semi-drooping habit of growth, and develops its first flowers within one foot of the ground, the inflorescence totalling a length of at least 5 feet. Such plants when well cultivated on single stems, or even with several shoots, form handsome shower-like masses of flowers, a typical illustration being a plant of the variety the Hon. Edith Gibbs. Compared with the bulk of varieties forming the Novi Angliæ or Novi Belgii sections, with their gaunt, upright habit of growth and with just a bunch of blossom at their top, the decorative value of the newer forms is at once apparent. The bulk of these later forms have small but bright flowers, with pleasing colours. For furnishing a supply of cut flowers, they are of infinite value, owing to the greater quantity of bloom produced. One great advantage of single stemmed plants of this type is the manner in which they can be introduced into the ordinary herbaceous border. Planted within 3 feet of the verge among low-growing plants, and supported by one stake only, these plants do not interfere with the other subjects, but, having abundance of light and air they grow sturdily, and in the autumn form beautiful objects.

To Mr. Edwin Beckett, Aldenham Gardens, belongs the credit of first raising and introducing this type of Aster. To obtain variety in colour, this hybridist has largely used as a parent "Pleiad," a variety growing but one foot in height, and possessing rich, rosy, purple coloured flowers. A. ericoides, which in itself is one of the best forms, having long graceful sprays covered with small white flowers, was also used. From this latter variety, much of the improved habit of growth was obtained. As might be expected, those two sterling varieties Coombe Fishacre and cordifolius were also employed. The results from these last named were not quite so good in point of form as from the other parents; still, several handsome varieties were also obtained from these. Michaelmas Daisies when grown by themselves furnish a much better display than when mixed with other ordinary herbaceous plants, except when planted in the manner above mentioned. The best effect is produced when they are massed in varieties of one colour, while for the front row the kinds with a drooping habit make a splendid finish to the border, quite hiding the soil.

VARIETIES.

The following varieties are derived from A. ericoides and its progeny:—elegans, Hon. Edith Gibbs, which was obtained by crossing ericoides with Robert Parker. The small pale-blue flowers are profusely produced. The plant attains a height of 5 feet. Enchantress is a seedling from the above, being even more graceful in its habit of growth than its parent, making a perfect weeping pyramidal growth 4 feet in height. The colour of the flowers is faint-blush with a yellow disc, changing to a distinct dark brown that renders it one of the most conspicuous varieties. "Freedom" grows 4 feet high, being a giant form of the type. The flowers are white, with a conspicuous golden disc, and are very freely produced. Ophir is a variety also raised from ericoides, its height being 3 feet. The small, creamy, white flowers are suffused with pink, and possess a distinct golden disc. Osprey is a splendid variety for furnishing cut flowers, the height being 2 feet. In colour the blooms open a soft pink, deepening with age to a deeper hue. Sensation, 3 feet in height, has white flowers with a golden disc. The habit is much branched. Delight, rising to 4 feet, is also of a dense branching habit of growth, and has small flowers with white petals, changing to pink with a yellow disc.

The Hon. Vicary Gibbs was obtained from Pleiad. The plant attains a height of 3 feet. The colour of the flower is bright pink, and the first flowers of the inflorescence are produced close to the ground. Gloriosa is an acquisition. The colour of the flowers is of striking appearance, and when the florets are unfolding it is white, changing to lilac, and then to deep purple with age. The growth is somewhat erect and very free to flower. The Pearl is from the same batch, being slightly taller than the parent; the flowers are pearly white in colour. Minnie, 2 feet; the flowers are white, changing to pink and purple. This variety is free in flowering. Royalty, deep purple pink, 2½ feet. From cordifolius elegans, itself a most graceful variety, a form was produced, whch has been called Edwin Beckett. This latter grows 5 feet high, the flowers being larger in size and of a darker blue than its parent.

A. cordifolius profusus is a cross from C. Diana, but it is more free in flowering than the parent, and, in addition, has larger flowers. The colour is pale mauve, the height being 4 feet. Golden Spray was raised from Freedom. With the short petals and the intensely golden disc, combined with freedom of flower, it well represents golden sprays. In habit of growth, it is especially pleasing on account of its branching freely and drooping most gracefully. King Edward VII. is a seedling from Osprey, and grows 4 feet high. The medium-sized flowers are rich mauve in colour. The side branches are horizontally formed, making a full, handsome specimen. Coombe Fishacre is quite one of the best of the race, growing 3 feet high, and as much in diameter, in a graceful horizontal manner. The flesh-coloured flowers are freely produced. Triumph, a variation from the last-mentioned, has blooms much larger than those of the type. It is dark mauve in colour, very free in blooming, and quite the best of the border varieties. Brightness, of like origin, has deep bright pink flowers larger than the type. A. cordifolius "white Diana" was raised by the late Rev. C. W. Dod. It is floriferous and attractive in appearance, but the flowers are not quite white, being slightly tinged with blue. *E. Molyneux.*

THE ALPINE GARDEN.

SCILLA SIBIRICA AMŒNULA.

Classed along with Scilla sibirica in works of reference, there are not many who know of this form, which is seldom offered as distinct from the favourite Siberian Squill. It is, however, worth securing by those who care for the earliest hardy flowers, as the plants bloom earlier than the type, or even than the form called S. sibirica taurica, which anticipates the type by a week or two. I received a bulb of S. s. amœnula from Mr. James Allen in 1902, with the remark that he did not think this plant was in the hands of the trade. It has increased but slowly with me, and is dwarfer than the typical S. sibirica, while it is brighter in its fine blue colouring. This Scilla has been considered a distinct species by some, but the *Index Kewensis* classes it with S. sibirica. *S. Arnott, Sunnymead, Dumfries.*

CHINESE CONIFERS.

TSUGA YUNNANENSIS, MAST.*

The genus Tsuga, comprising the Hemlock Spruces, has representatives in the Himalayas, North Western America, Carolina, Japan and China. The species are not always easy to discriminate one from the other, but the Chinese species here figured is readily distinguishable from its near allies by its spreading branches, its entire not ciliated leaves, its sessile, horizontally spreading, subglobose and relatively large cones. The linear leaves are variable in length, the longest measuring about 25 millimetres. They are green and channelled on the upper surface, glaucous on the lower surface, and with the entire margins slightly revolute. The apex is nearly entire or with a very shallow notch and the base is slightly twisted. The cones measure about 25 millimetres in length and as much or a little more in breadth. The cone-scales are light yellowish-brown in colour, slightly striate, and with a short, ovate-acute bract at the base. The winged seeds are slightly shorter than the cone-scales.

T. yunnanensis was first described by Franchet from specimens collected in Yunnan by Father Delavay at an altitude of 2,800 metres! Henry also collected it in Sze-chuan, n. 7,156!, 8,896!; Pratt on Mt. Omei n. 871!; 987!; Wilson found it in Hupeh, n. 572, ! and 1,898!

Our illustration is taken from specimens collected by Wilson, n. 3,014! in Western China at an elevation of from 9,000—11,000 feet. Many of the leaves have fallen in the process of drying. The tree is locally known as Thie Sha, meaning iron-wood. It is in cultivation in Messrs. James Veitch & Sons' Nursery at Coombe Wood, and will probably prove as hardy as its near allies T. Mertensiana (commonly known as T. Albertiana), T. Brunoniana, T. Sieboldi, and others.

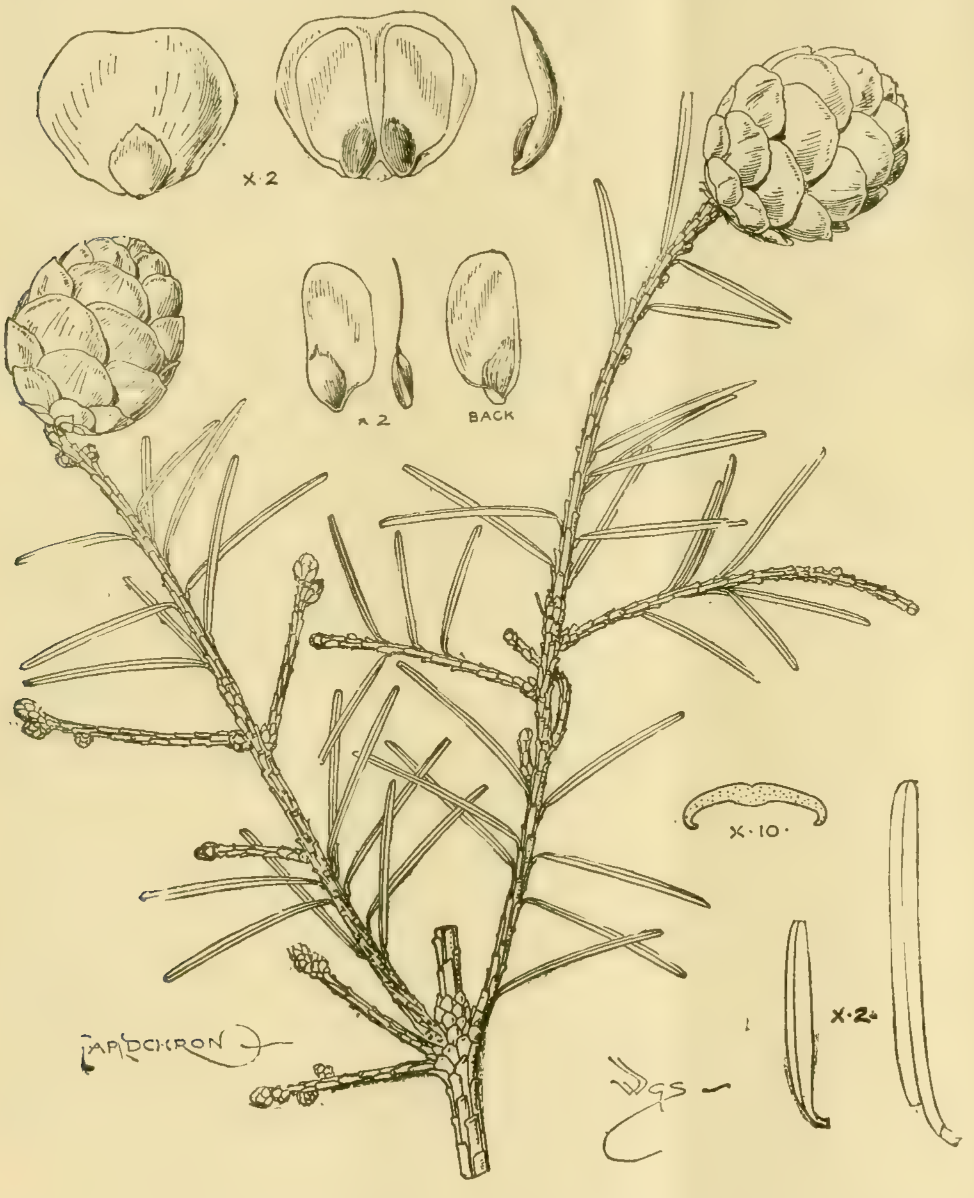

FIG. 93.—TSUGA YUNNANENSIS.

Branch with cones. The leaves have mostly fallen, but their numbers and position are clearly shown by the leaf-scars. The details show the leaf magnified and, above, the cone-scale with the bract, and with the winged seeds.

JOHANNESBURG.

From Mr. Stirrat's report on the parks of this town we learn that much has been done, and is being done, to beautify the city.

JOUBERT PARK.—At the commencement of the past year considerable attention and consideration were extended to this park as to the best method in which the grounds could be satisfactorily improved, and it was found that, when the park had been originally laid out, the major part of the grounds had been planted with the ubiquitous Eucalyptus and Acacia, which obviously threatened to monopolise all the nourishing ingredients from the soil, and they were likewise proving prejudicial to the younger generation of flowering trees and shrubs growing adjacent to them, and it was finally decided to have the majority of these trees removed and their places filled by others of a more attractive nature. The whole of the shrubberies have now been thoroughly trenched and a most liberal supply of manure incorporated in the soil. This was considered essential owing to the impoverished nature of the ground, occasioned by the exuberant growth of the Eucalyptus and Wattles.

The reconstruction of the miniature lake in the north-east corner of the park was taken into contemplation, and it was found necessary to dispense with the lake, the whole of which has now been filled in and that portion of the park converted into a Grass lawn, suitably planted with Bamboos and selected ornamental trees and shrubs, which, when established, will no doubt prove equally attractive to visitors patronising the grounds.

The rockery situated at the east side of the park was found to be overgrown with undesirable trees, which necessitated the complete overhauling and reconstruction of all the stonework, most of which had to be carted into the park, the background being constructed with the tree roots which were removed from the other parts of the park. A suitable and varied selection of plants have been appropriately introduced among the stones, the following varieties predominating:—Saxifraga, Sedum, Euphorbia, Cactus, Aloes, Mesembryanthemums, &c.

END PARK.—Several new flower-beds have been made in the main portion of the park, thus enhancing the general appearance of the grounds. A piece of ground has been hedged off for the propagation of young bedding plants sufficient to meet the requirements of the whole of this park.

OVAL PARK, JEPPESTON.—This park likewise has been thoroughly renovated during the early part of the year, and owing to the rich loamy nature of the ground it was deemed advisable to have the whole of the ground laid out in Grass lawns, planted with ornamental shrubs, and choice varieties of Roses.

ROTUNDA PARK, TURFFONTEIN.—It is thought advisable not to remove the Eucalyptus which are at present growing in this park, and it is intended to plant the centre portion with Roses and flowering shrubs.

CREATION OF NURSERY.—After considering the enormous quantity of trees which would be required by the Council in the near future for the adequate planting of the parks, cemeteries and open spaces, &c., it was considered advisable to create a nursery in the Eckstein Park for the propagating and rearing of a suitable stock of trees and shrubs to meet the future requirements of the Council, and on February 1, 1905, a practical gardener was placed in charge of this park, together with the nursery, and a portion of the park, about five acres in extent, was fenced in, and is now being used for this work, and already some 600,000 seedling trees and shrubs, including all the best and most suitable varieties, are being cultivated in the enclosure. The ground is amply supplied with water.

ZOOLOGICAL GARDEN.—Up to the date of this report all the animals comprising the Zoological collection, with the exception of four lions and the leopard, have been housed in the private grounds belonging to the Braamfontein Estate Co., but this naturally proved unsatisfactory to the general public and visitors, and it was finally resolved to have all the animals belonging to the Council removed into the Council's ground.

STREET TREE PLANTING.—The sum of £2,000 has already been voted by the Council for the planting of trees in the public streets; 1,000 ornamental tree guards have already been ordered from England, and are expected any time. A sufficient quantity of trees is now in stock, so that the work will be commenced immediately.

CEMETERY.—The gardening work in the cemetery has increased very considerably during the past year. *A. H. Stirrat, Superintendent of Parks.*

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* TSUGA YUNNANENSIS, Franchet in *Journ. de Botanique*, [illegible] p. [illegible] [illegible] in *Bull. Soc. Hort.*, France (1900), p. 231.

PLANT NOTES.

THE SOAPWORTS.

The plants belonging to the genus Saponaria are closely allied to the Pinks, from which they differ principally in having no calycine scales to the flowers. The name of Saponaria has reference to the soapy properties of the British species, the leaves of which will produce a lather. Included in the genus are some 36 species, distributed over the southern portion of Europe and the temperate parts of Asia. Of this number the greater proportion are annuals and biennials, but very few of these are of any garden value. Among the perennials, however, are included some of the choicest subjects for the rock garden, for instance, S. caespitosa and S. ocymoides. The former of these, with its neat tufted habit, is worthy a prominent place in the more select part of the rockery, whilst the latter, of more spreading habit, loves to trail over old walls or stones in sunny places. The Soapworts are all easy of cultivation, their main requirements being a well-drained position, a sunny aspect, and sandy loam. Some of the species are often killed during the winter, but wet is more responsible for their failure than cold, as the plants are impatient of stagnant moisture. Slugs are very fond of the smaller Alpine species, and, if not prevented, will very soon destroy established plants by eating out all their growing points. Most of the species produce seed, and may be increased in this manner, but others are propagated by means of cuttings and by division of the root stock in autumn or spring. The species enumerated below comprise the choicest in cultivation, the first nine being perennials, the rest annuals.

S. bellidifolia is a handsome plant forming tufts of long Daisy-like leaves and producing in June and July yellow flowers in heads, surrounded by an involucre of bracts. It is a native of Central Europe, extending into Greece, and is usually found growing in high rocky places, reaching to an elevation of 5,000 feet in Dalmatia. Growing about six inches high in favourable situations, it is a useful and pretty plant, and the flowers last for some considerable time. A well-drained position is essential in winter, and it should be given a little protection of light litter during sharp weather.

S. caespitosa.—A beautiful little plant, native of the Pyrenees, from whence it was introduced into this country in 1824. It grows on calcareous rocks at high elevations, usually in dry, barren places. Of dwarf, tufted habit, with linear leaves, it produces its flowers in July and August. These are rose-coloured, and are borne in loose umbels on leafy stalks from three to five inches high. It is very free in flowering when planted in a warm, sheltered place, a sloping position wedged between stones suiting it best. One of the most charming of the summer flowering rock-plants, it well repays growing.

S. depressa, from hot, dry, chalky places on the mountains of Sicily, is a desirable plant, having tufted spatulate leaves and good-sized purplish flowers in heads produced in June and July.

S. lutea.—One of the smallest of the family, this species is found on very high mountains in the Savoy and Piedmont. It has been in cultivation for over a century, having been introduced in the year 1804. The plants form neat little cushions of linear leaves, and is studded with yellow flowers on short stalks in June and July. Gritty soil and a well-drained position is essential for this plant, and careful watch must be kept for slugs, which are very fond of it.

S. ocymoides.—A very elegant plant, with trailing stems and pink flowers; admirably adapted for the drier parts of the rock garden. It flowers profusely, and continues producing a succession of blossoms during the whole of the summer months. It seldom produces seeds, but it is readily propagated by means of cuttings inserted in summer time. It is a native of South Europe, and was introduced in 1768. It is a variable plant, there being some varieties of compact habit, and with flowers of deeper shades of colour, as well as more floriferous.

S. officinalis.—This is the common Soapwort found all over Europe, and also in temperate Asia. It is naturalised in parts of this country, and also in North America. The rootstock is white and fleshy, and of a creeping habit, which renders it a suitable plant for the wild garden, where it can have plenty of room to ramble about. The pale lilac flowers are of large size, and are produced on leafy stems one to three feet high in August and September. The double-flowered variety is a most desirable plant, and one well worthy a place in the herbaceous border.

S. pulvinaris.—This plant is also known under the names of S. libanotica and S. Pumilio. It is a native of Asia Minor and Syria, and is found in the Alpine regions of the Taurus at an elevation of 6,000 to 7,000 feet, as well as on the Lebanon. Growing in stony soil, it forms neat little tufted plants not unlike Silene acaulis, and bears somewhat small bright rose-coloured flowers on very short stems. It is a choice little plant for a sunny rocky ledge in gritty soil, and is quite hardy.

S. Sundermanni was received from Herr Sundermann, of Lindau, in Bavaria, in the spring of 1902, and flowered for the first time in the following June. It closely resembles S. bellidifolia, but has rather larger flowers and is of more floriferous habit than that species.

S. Weinmanni came from the same source and at the same time as the preceding plant, and also flowered in June, 1902. It is closely allied to S. caespitosa, even if it be not a form of that species. It has, however, paler purple flowers and a shorter calyx. The flowers are produced very freely, while the plant has a very compact habit, and is only two or three inches high, which makes it a first-rate rock garden plant. Both the last-named are quite hardy in sunny, well-drained positions planted in gritty soil.

S. calabrica is the only annual of any value belonging to the genus. It is a much-branched, hardy little plant from six to 12 inches high, and bears numerous rose-coloured flowers in summer. A native of Calabria, it was introduced in 1830, and is a most useful and brilliant plant of dwarf compact habit. Seeds may be sown either in autumn or spring. Another annual often met with in gardens is the Cow Herb (S. vaccaria), with pale red flowers on much-branched stems about two feet high. It is a native of Europe, and was introduced in 1596, and is now naturalised in many parts of this country. *W. I.*

ABUTILON MEGAPOTAMICUM.

This plant, with its bright variegated yellow and green foliage, is a source of admiration all the year round. Plants in 5-inch pots, raised from cuttings inserted two years' ago, in a warm greenhouse, are now graceful plants with shoots over 6 feet high. They are flowering at the present time, and the plants are clothed with their bright foliage down to the pots.

The flowers are solitary, being produced from the axils of the leaves near to the points of the shoots from which they hang in an elegant fashion, like so many pendants. The salmon-pink, fine ribbed, urceolate-shaped calyx and the projecting column of stamens form the showy parts of the flower. The petals are at first of a light yellow colour, but change with age to brown. The leaves, from 1½ to 3 inches in length, are alternate, their margins serrated and their apices sharply acuminated. The plant would, undoubtedly, form a good subject for covering a limited wall space or trellis work, although not used for that purpose here. For corridors and corners of rooms, well-grown plants are effective subjects, while the flowering points of the shoots can also be used as cut flowers in vases and glasses at a season when flowers are not over plentiful. *M. M. N.*

CULTURAL MEMORANDA.

A HINT AS TO TRANSPLANTING AND SEED-SOWING.

When transplanting vegetables in the young state from boxes, pans and seed-beds, it is well for the operator to be careful to make the ground, wherever the planting is to be carried out, quite firm by trampling—not by rolling it, for the roller, having so large a bearing owing to its length, is ineffectual for the purpose of bringing the soil to a firm consistency so as to render root-growth possible and add to the retentive property of the soil. This making firm of soil that has been deeply dug is equally needed before committing seeds of any kind to the soil, and in the case of Peas, Beans, Sea-Kale, and some other seeds of large size, if the soil is of a light nature, and loose from the action of the frost, the seeds should be trodden lightly into the bottoms of the drills before filling in the latter. Land that has been winter-trenched, unless it be of a very adhesive nature, is all the better for being compacted after dry weather by trampling, and in the case of ground being required for Onions, by a rolling before sowing the seed and after having sown it. Heavy soils, if given time after digging, become compact in consequence of their weight, and beyond a trampling of the dry surface, should not be rendered firmer by other means. *F.*

VEGETABLES.

SEAKALE GROWN IN OPEN GROUND.

I had almost headed this short note as Seakale grown naturally, but the term would be misleading, for if grown naturally the plants would not be bleached, and comparatively few people are fond of green tops, though at this season they are by no means to be despised as a vegetable. Seakale which is not forced in artificial heat is much superior to the Kale usually sent to market. If the stools are covered in the ground where they have grown, and as simply as possible, the produce is much better and more succulent, the process less costly, and the yield is greater. The plants will also continue to yield for years, though the best results are obtained during the first three or four years after planting. The lifting of the roots and removal to a heated structure cannot always be done, because everyone has not the necessary convenience. Without such means they may have Seakale all through April, and in the late season, well into May. The old method of forcing Seakale with hot manure is not so much practised as formerly. I mean the method of forcing the plants under inverted pots. Most of the roots are now lifted, and this effects a great gain in time. Regular supplies may thus be obtained from November until the end of March. When this season has been reached I would advise the Kale to be covered in their growing quarters sufficiently to effect bleaching. It is not necessary to use manure as a covering, and for many years we have banked up with soil obtained from between the rows of plants, and this has answered admirably. The chief disadvantage in using soil is that slugs are at times troublesome. Slugs are so fond of the tender Kale that they must be destroyed, and this can readily be effected by using a little lime and then a thin coating of fine coal or wood ashes before covering over. The plants for furnishing a supply at this time are grown for the purpose from root cuttings, these being planted every third year on an open quarter or trenched land, which is not very heavy, but is enriched with manure. Some Kale is taken from them the first season, but in the following season the growths are double the size of those forced indoors earlier in the season. They are also more succulent and less bitter than

Kale forced in great heat. The sets are planted at one and a half feet apart in the rows, and a space of four feet is allowed between the rows. This allows of ample soil to bank up with, and the plants are covered early in the year, the chief necessity being to apply sufficient soil to prevent the new growths from pushing through. It is a simple process, and the roots grown here for half-a-dozen years past give as full a crop now as in the first few seasons. As the plants are gross feeders, we afford them freely during the summer such foods as fish guano, salt and soot, and artificial and liquid manures. The plant should have the flower spikes removed. *G. Wythes, Syon House Gardens, Brentford.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Royal Horticultural Society's Plant Distribution.—I fully agree with the note on p. 218. I have just received a box with five plants, none of them rare, but all diminutive. For the box and carriage I had to pay 10d., the carriage itself being 3d. This means that I am charged 7d. for a small wooden box worth 2d., and practically pay 1d. each to the society for plants of no greater value. Under these circumstances I sign myself, *Cui bono?*

Disease in Seakale.—Seakale roots are liable to be badly affected by "rust" in some soils; we have had them rotten half-way through or more, seriously affecting the produce when forced. This may be effectually prevented by surrounding the sets with coal ashes at planting time, where the system of making annual plantings is in vogue. *R. W. Dean.*

The Hawfinch.—This bird commences to build its nest in these gardens in April, and continues to do so until even the second week in June. I have never found more than two nests at this later date. The first appearance of the young birds in this neighbourhood is at the time when our first crop of early outdoor Peas is ready to be gathered; this would be about the first or second week in June, when the parent birds can be seen enticing their offspring to learn the art of eating garden Peas. From this time onward, enormous damage is done to the succeeding crops by the parents, who are continually forcing the Peas from the pods for the benefit of their young, and these, in conjunction with the parents, continue to eat the Peas throughout the summer unless measures are taken against them, such as that Mr. Brookbank advised, namely, protecting the rows with garden netting—a system we have practised for years with complete success. The bird should not be destroyed, for its habits are very interesting to watch, and the destruction they cause is so little, excepting that done to garden Peas, which can easily be prevented by the use of netting. The bird is a charming creature when caged, and quite easy to rear when taken from the nest. It can be taught a number of tricks, and should not be placed in the aviary with small birds, for I have found that it will bite the legs of the small birds until they are almost severed. The bill is so massive and strong that I have had the flesh of my hand lacerated and cut, as if done by a knife. Their method of combating each other is by pecking at their antagonist's legs, and in protecting this limb from danger the bird attacked sits closely down upon the branch and drops its wing, which receives the onslaught and acts in the capacity of a shield. The song is very short and quiet, with interposed chatterings of a peculiar nature; they have also a trick of smacking their beaks or bills; the sound resembles that noise made when placing one's tongue in the roof of the mouth and then suddenly withdrawing the tongue from that position. In manners and habits the bird reminds the observer of a small parrot. It has a ravenous appetite, and is therefore always feeding. Its food consists of small stone fruit, its object being to extract the kernel; this is done after the fruit has fallen to the ground, and the flesh of the fruit rotted, or has been left hanging till dried up upon the tree, similar to the Haws upon the Hawthorn, from which the bird derives its name. It is also fond of the seed of the Laburnum, Hornbeam, and Beechnuts, Mountain Ash Berries, Portugal Laurel Berries, and the Snowy Mespilus fruit when dry and hard. At this time of the year the bird commences to attack the Beech tree for its buds, and some years it will make a raid for a short time upon the common Yew and Spruce Fir, after the manner of the crossbills, by pinching the tips of the branches entirely off, devouring the end it has bitten through and dropping the growing point upon the ground. When driven by a sharp spell of wintry weather, the birds will live upon Ivy buds, which they nip out roughly from the axils of the leaf stalk, generally injuring the base of that member of the plant; the effect of this will cause the leaf to drop, producing disfiguration of the entire shoot. The bird has a wonderfully bold and sharp eye, and immediately disappears upon the approach of a stranger; hence the belief that it is rare. If the birds have been approached without their observing your advance, or a gun fired off in their presence, they will artfully dart to some thick or dark cover such as Portugal Laurel Conifers, or Evergreen Oaks, and sit perfectly still, peeping and watching from which direction danger has arisen. These observations I have made during 21 years' experience, the birds having been here all the year round during that time. *M. E. Mills, The Gardens, Coombe House, Croydon.*

Mistleto on Oaks, Maples and American Walnut.—It must be due to the habit of certain berry-eating birds to frequent certain kinds of trees in cleaning their beaks from the viscid coating of the seeds of Mistleto, which accounts for that parasitic plant being found on some species of trees and not on others. Is it because of the roughness of the bark being more effective in the act than smooth bark? I am acquainted with an extensive park in which are standing many species of American Oaks, of about 100 years old, numerous younger specimens of Acer campestre, A. pennsylvanicum, A. platanoides and a few A. fraxinifoleum, and several of Juglans americana and J. cineria; and Mistleto is to be found *only* on Acer platanoides and Populus Canadensis, never on Oaks, either native or exotic, although an Oak forest, with stands 200 years old, adjoins the park. So abundant is it on the branches of the Maples named as to give the trees in the winter a verdure like that of leafed trees in the summer season; and men have occasionally to be employed to cut it away on account of its great weight, a work that is preferably carried out in winter, and the cut branches given to the famishing roe-deer, which eat it readily then and at other times. I may remark that the seeds being ripe in April, not earlier, this is the best month to rub them into crevices on the undersides of the branches of trees on which Mistleto is known most readily to grow. It is always advisable to bind a bit of close rabbit-proof wire round the branch in the form of a bag, as a defence against seed-eating birds, otherwise the operation will be a failure. *F.M.*

Parrya Menziesii.—Until the introduction of this plant about two years ago, this genus does not appear to have been represented in cultivation, although it numbers some ten species distributed over Northern Asia and Western North America. Judging from herbarium specimens, some are desirable plants, especially P. pinnatifida, a native of Turkestan, with the habit of Morisia hypogæa and having large purple flowers. P. Menziesii is a perennial, growing about 9 inches to 1 foot high, and is of a branching habit. The spatulate leaves, 1 to 4 inches long, are silvery in appearance, being covered with a tomentose pubescence. The purple flowers are freely produced in racemes resembling those of a small single Wallflower; indeed, it is closely allied to the genus Cheiranthus, and was originally described under the name of Cheiranthus Menziesii. It is evidently of somewhat variable habit, some forms being of more compact growth than others, while in the case of the flowers some are of a rich rose purple colour, while others are flaked with white. A native of California, it is usually found growing in stony soil on hills at high elevations. P. Menziesii requires to be planted in a warm and well-drained soil, moisture during the winter months generally proving fatal. In this respect it resembles the common Wallflower which, while succeeding well on a dry wall, will frequently die when grown in a damp border. It is easily raised from seeds which are produced freely, and it may also be increased by means of cuttings. *W. I.*

Grape Thinnings.—In reference to the paragraph on p. 218, 6d. per lb. is none too dear for Grape thinnings. I have seen them offered for some weeks past at 2s. and 2s. 6d. per 12 lbs. A regular trade is being done with these in cross-handled baskets, and they will be in season until Gooseberries are on the market. For the making of tarts they are a useful change, but being tart even when very small they require much sugar. They are exceedingly juicy, and considerable care is required in the cooking of them. Berries which are not thinned out until the stoning stage are not fit for such use. Sheets of canvas or clean mats are spread over the borders while the thinning is being done, and, with a little care, clean berries can be scooped up and placed in the baskets. *Stephen Castle.*

Prunus triloba and its Pruning.—This exceedingly fine shrub will shortly be in great beauty, and while it is before the horticultural mind may I draw attention to a correct method of pruning? It has been said that it should be cut hard back, but this is wrong, for although such drastic treatment does produce very fine results in the case of Forsythia and a few other shrubs, it is just the process best calculated to destroy all the natural grace of the Prunus and to make its sprays poor and miserable. By this treatment they become densely packed together, of nearly the same length, and very short, producing the effect once expressed to me by a classical gardener as "wally." "Walliness" should be avoided except in the case of fruit trees. I have a fine specimen on a wall, and every year, after flowering, all the shoots that are too long are cut out altogether. The others then have a natural development, and some shoots are covered with flowers for a length of over three feet. Some of the shoots are 5ft. 6in. long, but at the top the projection from the wall year by year is 2ft., and low down 3ft. 6in. This suits the position, and the specimen is as perfect as anything of the kind could be—there is nothing like "walliness." The plan that answers well for Forsythia is, I believe, applied to some shrubs quite mistakenly, let me therefore draw attention to a plan of pruning, very frequently applicable, that may be illustrated by the treatment of Raspberries. All the spent or undesirable shoots are cut out, and a suitable number of strong shoots are left to attain their full and natural development. Many shrubs are infinitely finer if treated in this way, and the same principle frequently applies under glass. Cutting too far back may even result in death; nipping and snipping produces a bad result in very many cases. Only a strong unstopped shoot can, in many cases, produce the finer heads of bloom. *R. Irwin Lynch, V.M.H., Botanic Garden, Cambridge.*

Melons in Winter.—A supply of ripe Melons available for use in the dark days of November, when shooting and house parties are frequent, affords some aspect of novelty in the dessert as well as utility. Though it requires a special effort on the part of the culturist to provide Melons at that season, the feat is by no means uncommon, but the case is quite different when ripe, luscious, and aromatic Melons are obtained in December and the three following months. It must be said that such fruits are the luxury of the few, and the possibilities of their possession remote to the great majority of gardens. Longleat Gardens, Warminster, now in the charge of Mr. Gandy, have records of many high and notable achievements in the past; and Melons certainly have afforded instances of success distinctly out of the common for many years. Famed, however, as these gardens have been for fruit, it has remained for Mr. H. Gandy to break all past records in maintaining not only a summer supply, but a winter one also, of Melons. It may be said that soil and structure have contributed largely to the history of these gardens in respect to Melons, but few past masters had dreams of Melons available for the early months of the new year, like Apples and Pears in the fruit store. The plants which bore these winter fruits were raised from seeds sown in the middle of July, and some doubts were raised later as to whether they would survive the chances of fate, and give useful issue. These fears, fortunately, were not realised; the steady advance of plants and crop afforded a prospect equal almost to that of summer. Mr. Gandy is emphatic in his conviction that the variety chosen for this winter rarity accounts largely for his success, and, judging from my own experience and observations, I am quite prepared to support this view. Without a vigorous constitution, and a fruit of a type that can resist decay, it would be impossible to preserve fruits so long in a sound state. Mr. Gandy has had fruits until the new year in previous winters, and his success has made him venture farther in prolonging their season. He is encouraged to do this by reason of the partiality his employer, the Marquis of Bath, has for Melons, and when such success attends these efforts there is ample justification for them. The variety in question is Veitch's Late Perfection, one raised by that famous gardener, the late Mr. Pettigrew, of Cardiff Castle, from whom Messrs. Veitch, I believe, procured the stock. I have said that soil and structure contribute largely to the success of the Melons in question; many readers of the *Gardeners' Chronicle* who have paid visits to Longleat will have observed how opposite the practices are there as compared with the common routine adopted by others. The fact is not concealed that Longleat soil needs no admixture of any kind, every necessary element being present from natural sources; but even admitting this, it cannot account for all the success obtained. I am not sure whether by a possible extension of the winter section this can be met by the maturity of a spring-raised supply. The possibility of a 10 months' service of ripe Melons, however, would seem to afford all that would be necessary and make a two months' rest quite welcome. [The electric light would surely be serviceable in this case.—Ed.] *W. Strugnell.*

SOCIETIES.

CORNWALL DAFFODIL AND SPRING FLOWER.

April 3.—The tenth annual show of this society eclipsed all its forerunners in excellence, the seedling Daffodils raised in the county exhibiting in many cases a very high order of merit, and 35 entries being obtained for single blooms not yet in commerce, as well as 13 for unforced, hard-wooded flowering shrubs, while for collections of hardy spring flowers there were 14 exhibitors. Such numbers of entries in these classes have never been approached at former shows, and the display afforded appeared marvellous to visitors from the colder districts of the kingdom, who could scarcely realise the possibility of such numbers of rare shrubs flowering in the open so early in the year. Rhododendrons did not form quite such a bank of colour as in former years, when there was no limit to the number of trusses staged, and the winner of the first prize in the premier class often had 300 trusses on his stand, besides which continuous frosts and bitter easterly winds ruined all exposed blossoms. Still, from those sheltered by foliage, a good show was obtained, and five exhibitors staged in the first class. The first prize bunches in the double Violet classes were exceptionally fine, the flowers being of great size and perfect freshness. The society is in a flourishing condition, and all the arrangements are admirably conducted by the Hon. John Boscawen, who has held the position of hon. secretary since the inception of the society.

The following flowers were granted awards of merit by the judges:—Mr. J. C. Williams's G.W., a seedling Daffodil with spreading orange cup on white perianth, and his No. 2774, a golden trumpet seedling; Mr. P. D. Williams's Incognita, Lord Roberts, and Pure Gold, a seedling, while Cultural Commendation was bestowed upon Lord Roberts and Queen of Spain to Messrs. Barr for Loveliness and to Mr. P. D. Williams for Polyanthus Prince of Orange; and Miss Clarice Williams was awarded a Cultural Commendation for Daffodil Autocrat.

Prize List.

The best collection of 30 varieties of Daffodils: 1st prize, Mr. J. C. Williams, with a remarkable stand containing only one named flower, White Queen. Many of the seedlings were of great beauty, and were composed of golden and bicolor trumpets, fine poeticus varieties, and flowers with wide crowns of orange-scarlet, buff and yellow; 2nd prize, Mr. P. D. Williams, with Ursula, Waxwing, Oriflamme, Bullfinch, Juno, Incognita, Beacon, Blood Orange, and others.

Six Magni Coronati: 1st prize, Mr. A. Blenkinsop.

Six Medio Coronati: 1st prize, Rev. A. T. Boscawen.

Three Leedsii: 1st prize, Rev. A. T. Boscawen.

Six Parvi Coronati: 1st prize, Rev. A. T. Boscawen.

Three doubles: 1st prize, Mrs. R. Nowell-Usticke.

Finest bloom of Magni Coronati in commerce: 1st prize, Mr. P. D. Williams, with very fine Maximus; 2nd prize, Mr. A. Blenkinsop, with Weardale Perfection.

Finest bloom of Medio Coronati in commerce: 1st prize, Mr. P. D. Williams, with Oberon; 2nd prize, Mr. H. G. Hawker, with Lucifer.

Finest bloom of Parvi Coronati in commerce: 1st prize, Mr. P. D. Williams, with Armorel; 2nd prize, Mr. C. Dawson, with Horace.

Finest bloom of Magni Coronati not in commerce: 1st prize, Mr. P. D. Williams, with Irene, a twin-flowered white seedling with well-filled trumpet; 2nd prize, Mr. P. D. Williams, with Hannibal, a large pale yellow.

Finest bloom of Medio Coronati not in commerce: 1st prize, Mr. J. C. Williams, with a bright yellow unnamed seedling; 2nd prize, Mr. J. C. Williams, with a white seedling, unnamed.

Finest bloom of Parvi Coronati not in commerce: 1st prize, Mr. P. D. Williams, with Medusa, a N. poeticus, and Grand Monarque seedling, having a white perianth and spreading cup of bright orange, three flowers on a stem, one of the most striking blooms in the show; 2nd prize, Mr. J. C. Williams, with an unnamed poeticus seedling, having a flat orange crown.

Group of Daffodil seedlings that have not been in commerce four years: 1st prize, Mr. C. Dawson, with a very fine stand containing Bernardino, a Lulworth seedling, with large white perianth and yellow cup edged orange; Cavalier, with lemon-white perianth and flat yellow crown edged orange; Cœur de Lion, with pale yellow perianth and flat orange cup; Dawn, with white perianth and flat primrose cup; Crusader, Cresset, Rosella, Mascotte, Penguin, Armorel, and Bullfinch.

Besides the foregoing a number of classes were provided, in which the price of the bulbs was limited.

Twelve hardy spring flowers: 1st prize, Mr. P. D. Williams, whose stand contained Iris bucharica, I orchioides, Caltha platypetala, Tulipa præstans and Fritillaria libanotica.

Six hardy spring flowers: 1st prize, Lady Margaret Boscawen, who showed the double crimson Primrose Pompadour, so difficult to grow satisfactorily, in very good condition.

Best group of Rhododendron blooms, not more than 40 trusses: 1st prize, Mr. D. H. Shilson, whose stand contained a bright crimson Aucklandi seedling which should make a mark when a larger truss can be shown; 2nd prize, Mr. J. C. Daubuz; 3rd prize, Mr. R. Fox. Six trusses outdoor Rhododendrons: 1st prize, Mr. D. H. Shilson. Six trusses Rhododendrons under glass: 1st prize, Mr. D. H. Shilson. Finest truss of outdoor Rhododendron: 1st prize, Mr. E. Backhouse. Finest truss of outdoor Sikkim Rhododendron: 1st prize, Mr. E. Backhouse. Finest truss of Rhododendron under glass: 1st prize, Mr. R. Fox. Six outdoor Camellias: 1st prize, Mr. J. C. Williams. Six Camellias under glass: 1st prize, Mr. J. C. Daubuz. Finest Camellia bloom: 1st prize, Rev. A. T. Boscawen, with C. reticulata 7 inches in diameter.

Twenty varieties of outdoor, hard-wooded, flowering shrubs: 1st prize, Mr. R. Fox, with Embothrium coccineum, Datura sanguinea, Pittosporum eugenioides in profuse bloom, Melianthus major, Acacia Drummondi, Erica arborea, Acer rubrum, and thirteen other shrubs; 2nd prize, Sir A. P. Vivian. Six varieties of outdoor, hard-wooded, flowering shrubs: 1st prize, Mr. E. Backhouse, whose stand contained Acacia dealbata, A. longifolia, and Boronia elatior; 2nd prize, Sir A. P. Vivian. Other shrubs exhibited in these most interesting classes included Anopteris glandulosa, Acacia armata, Correa cardinalis, C. ventricosa, C. carnosa, Calceolaria Burbidgei, Senecio petasites, Cestrum fasciculatum, Boronia megastigma, Clianthus puniceus and its white variety, Grevillea sulphurea, Viburnum rugosum and Rhapithamnus cyanocarpus.

Nurserymen's exhibits formed a bright addition to the show. The Devon Rosery, Torquay, staged a large collection of pot Roses in bloom, as well as a large number of cut blooms. The Craven Nursery, Clapham, Yorks., showed a selection of rock plants prettily arranged, amongst which were Primula farinosa, P. Clusiana, P. frondosa, P. multiceps, Androsace pyrenaica, covered with tiny white flowers, Bryanthus erectus, Edraianthus serpyllifolius, and others. Messrs. Wallace, Colchester, had Anemone Pulsatilla, Iris stylosa, Primula Auricula, Fritillaria aurea, Erythronium revolutum, Bellis sylvestris, Puschkinia libanotica, Hepaticas, and many Tulips. Messrs. Barr & Sons staged a representative collection of Daffodils, amongst which were noticeable Duke of Bedford, Egret, Seagull, Pharaoh, Strongbow, Canary Queen, Mrs. C. W. Earle, Argent, Cassandra, Cleopatra, Princess Maud, and Mountain Maid. Messrs. Ware & Co. showed Iris caucasica, Dodecatheon Hendersoni, numbers of named varieties of Primula Sieboldi, Mertensia virginica, Crassula Cooperi alba, Erythronium californicum, Æthiaonema stylosa, Orobus vernus albus, Gaultheria procumbens, Saxifraga Elizabethæ, and S. Burseriana. Messrs. R. Veitch & Son, Exeter, had a large selection of shrubs and rock plants, amongst which were Primula denticulata, P. cashmeriana, P. nivalis, P. Allioni, P. viscosa, Saxifraga Rhei superba, S. apiculata, S. Grisebachii, S. Guildford seedling, Androsace sempervivoides, A. villosa, A. pyrenaica, Morisia hypogæa, Dondia Epipactis, Xanthoriza apiifolia, Magnolia stellata, M. conspicua, M. Soulangeana nigra, Grevillea Forsteriana, Hardenbergia monophylla and Lotus peliorhyncus. Mr. G. Reuthe, Keston, Kent, had Tanakea radicans, Daphne indica, D. Blagayana, Iris sindjarensis, Erythronium grandiflorum, Brachysema lanceolata, Lithospermum rosmarinifolium, and other plants. Messrs. Treseder & Co., Truro, showed Tree Ferns, of which they have supplied a large number to gardens in South Devon and Cornwall, and other decorative plants.

NATIONAL AMATEUR GARDENERS'.

April 3.—This association held its April flower show and lecture at Winchester house, Old Broad Street, E.C., on the above date. Mr. T. W. Sanders, F.L.S., the president, presided, and an interesting lecture on the cultivation of Tomatos and Cucumbers was delivered by Mr. W. Dyke.

In the Great Hall the exhibition of flowers, &c., was a sight one would hardly expect to find in the very heart of the city. These exhibits are mostly grown by amateurs engaged in various City commercial houses during the day, and the high standard of quality demonstrates the fact that even with very limited time at his disposal, the intelligent amateur is capable of producing fruit, vegetables and flowers worthy of a place on any exhibition table.

The judges drew special attention to the excellence of the Ladies' Table and other decorative exhibits, of which there were a dozen.

The next flower show will take place on May 1, at 7 p.m., and the lecture will be on "Cactus Dahlias," by Mr. J. B. Riding.

The annual subscription to this association is 5s., and the hon. secretary is Mr. Richard Cordwell, 35, Medusa Road, Catford, S.E.

DUMFRIESSHIRE AND GALLOWAY HORTICULTURAL.

April 4.—The annual meeting of this society was held in the Town Hall, Dumfries, on the above date. The chair was occupied by Mr. R. Service, of Messrs. James Service & Sons, the chairman of directors. A satisfactory financial report was submitted by the secretary and treasurer, Mr. R. G. Mann. It was agreed to hold the usual Chrysanthemum show on November 7. The secretary and treasurer is Mr. R. G. Mann, *Courier and Herald* Office, Dumfries,

GARDENERS' DEBATING SOCIETIES.

CHELMSFORD AND DISTRICT GARDENERS'.—The closing meeting of the present session was held on Friday, March 2[illegible], a good attendance of the members resulting. Mr. S. Pragnell, of Broomfield Lodge, read a paper on "Stove and Greenhouse Plants," dealing with the subject in a very exhaustive and practical manner. Specimens of various stove and greenhouse plants were exhibited, and a number of lantern slides made the lecture more interesting. *W. C. S.*

REDHILL, REIGATE AND DISTRICT GARDENERS'.—This association held their usual fortnightly meeting on Tuesday, the 27th ult., there being a very large attendance of the members. Mr. M. J. R. Dunstan, of Wye College, gave a lecture on "The Manurial Requirements of Garden Crops."

CARDIFF GARDENERS'.—The nineteenth annual general meeting of this association took place at the Sandringham Hotel, Cardiff, on March 20, when Mr. R. Mayne presided over a large attendance of the members. The hon. treasurer, Mr. T. Malpass, in presenting the balance sheet, stated that it was the most favourable one he had ever submitted. Every liability had been met, and besides outstanding subscriptions, he had a balance in hand of fourteen shillings and sixpence. Mr. John Julian, the hon. secretary, gave his report upon the work of the society for the past year. The annual summer and autumn outings were mentioned, also the annual dinner, and the lecturers and prize donors who had so ably and generously contributed to the success of the meetings. A large number of new members have been enrolled during the year, and the attendance has again established a record. A word of thanks was tendered to the committee for their assistance in carrying on the work, which had been the heaviest in the annals of the association. The report was unanimously adopted. The chairman spoke at some length upon the work and progress the society has made. The election of officers for the ensuing year was next proceeded with. Mr. J. J. Neale, "Lynwood," Penarth, was elected president. The whole of the vice-presidents were re-elected, and the retiring president was elected an hon. member. The following gentlemen were each re-elected to their respective offices: chairman, Mr. R. Mayne; vice-chairman, Mr. C. E. Collier; hon. treasurer, Mr. T. Malpass; hon. secretary, Mr. John Julian; and Messrs. T. Clarke, H. R. Farmer, H. Gillett, J. Mountney, W. J. Prosser, and M. Toy, as members of the committee, with the names of Messrs. Wm. Davies and T. Richards added in the place of Messrs. C. Lewis and F. Waller, who have resigned office. *J. Julian.*

SCHEDULES RECEIVED.

Worthing Horticultural Society's Summer show, to be held in the Steyne Gardens, Worthing, on Wednesday, August 1, 1906, and the Autumn show to be held in the Bedford Hall, Worthing, on Tuesday and Wednesday, November 13, 14, 1906.

Presentation to Mr. D. C. Powell, Powderham.—On Tuesday, the 10th inst., at the Guildhall, Exeter, by the Mayor of Exeter, who this year is President of the Devon and Exeter Horticultural Society, Mr. D. C. Powell was presented with a handsomely-framed address and a substantial cheque on the occasion of his leaving Devonshire for South Africa, which will take place this month. The subscribers numbered about eighty, and included the Mayor, past presidents and honorary secretaries of the Devon and Exeter Horticultural Society, the Devon and Exeter Gardeners' Association, and many other Devonshire friends. The address was in the name of the subscribers "as a small memento to show their appreciation of Mr. Powell, and of his services towards the advancement of horticultural work generally." Mr. Powell, who has always been very popular in the western county, years ago as an exhibitor, and subsequently as a judge at the local shows, has been head gardener at Powderham Castle under three Earls of Devon in succession, and, for some years past, has been lessee of the gardens on his own account. Ill-health in his family has induced him to go to South Africa. *A. H.*

The Riviera's Gardener-Poet. — The Riviera will on Sunday next witness a charming ceremony. It is not often that a poet has claims upon industry, but to Alphonse Karr, the gardener-poet of the Riviera, that beautiful region owes all the prosperity that it does not derive from visitors: Karr settled at Nice in 1852, when the place was still a part of the dominions of Victor Emmanuel. To people of the present day the statement seems hard to believe, but it is true, that the cultivation of flowers was so little known in the Riviera that cut flowers for a local banquet had to be ordered from Genoa. The poet changed all that. His garden was the cradle of the great cut flower trade of the Riviera, and he lived long enough to say, half in jest, half in earnest, "I am the last of the gardeners; they are all horticulturists now." *Globe.*

CATALOGUES RECEIVED.

ENGLISH.

Ransomes, Sims & Jefferies, Ltd., Orwell Works, Ipswich—Lawn Mowers.

William Wallace & Co., Benston Nursery, Johnstone, N.B.—Pansies, Violas, Chrysanthemums, &c.

Fisher & Ludlow, Ltd., Art Metal Workers, Rea Street, Birmingham—Silver-plated flower holders, epergnes, &c.

Clibrans, Altrincham, Manchester and Bramhall—Dahlias.

George Bunyard & Co., Royal Nurseries, Maidstone—Hardy Herbaceous Plants.

Maurice Prichard, Christchurch, Hants.—Herbaceous and Alpine Plants.

M. V. Seale, The Nurseries, Sevenoaks—Dahlias and bedding plants.

A. J. Keeling & Sons, Westgate Hill, near Bradford, Yorks—Orchids.

H. Cannell & Sons, Swanley, Kent—General.

FOREIGN.

François Gerberaux, 17, Rue de Cronstadt, Nancy, France—Garden and Indoor Plants, including Novelties.

E. Schmidt, Horticulteur á Lyon-Vaise, France—Bedding Plants, &c., including Novelties.

V. Lemoine et Fils, Rue du Montet, Nancy, France—Plants.

Peter Lambert, Trier, Germany.—New Roses for 1906.

Wm. A. Peterson, 108, La Salle Street, Chicago.—Hardy Trees, Shrubs, and Plants.

James Vick's Sons, Rochester, New York, U.S.A.—Treatise on Chinese Asters, with list of varieties.

Callander Cactus Co., Springfield, Ohio, U.S.A.—Cacti and plant novelties.

Billiard et Barre, 10, 12, Rue de Chatenay, Fontenay-aux-Roses, Seine, France—Stove plants and Cannas.

Jardins Correvon Floraire Chene Bourg., Geneva—A comprehensive list of Alpine and other hardy plants.

COLONIAL.

C. A. Nobelius, Gembrook Nurseries, Emerald, Victoria, Australia—Fruit trees.

ENQUIRIES AND REPLIES.

Law of Greenhouses.—Under the London Building Act, greenhouses are exempt if 30 feet away from a house, &c. I have recently erected a tenant's fixture greenhouse 15 feet by 9 feet, and the borough surveyor threatens proceedings unless I give notice. He claims notice under Section 76 of the Metropolitan Management Act, where it says: Before proceeding to lay or dig the foundation of any new house or building, seven days' notice must be given. I reply that my greenhouse has no foundation, but is all wood and glass and rests on a *single course of loose bricks laid on the ground level*, and is a tenant's portable fixture. He replies that whether or not he is entitled to notice, and shall take proceedings. This view upsets all our previous ideas of the subject, and is of immense importance to amateurs in the suburbs. Can anyone give me any information on this matter? *C., Lewisham.*

ANSWERS TO CORRESPONDENTS.

Book: *P. H.* *Exotic Forest and Park Trees for Europe*, by Dr. H. Mayr, can be obtained through Messrs. Williams & Norgate, Henrietta Street, Covent Garden, London, W.C.

Cattleya Schroderæ alba: *M. Felken, Tenuta di Boscobello, Firenze, Florence.* Your flower is of good size and shape, and is white with dark orange disc to the lip. On first opening, the blooms of a good number of ordinary Cattleya Schroderæ appear to be white, but afterwards assume a pale lilac tint. The specimen you send is a mature flower and the variety will consequently remain true.

Hot Water Pipes: *V. C.* We cannot recommend individual firms; scan our advertising columns.

Lease of Vinery and Glasshouses: *Muscat.* It is for the parties to the contract to determine whether or not the lease to be undertaken shall be a repairing lease. If it is to be a lease under which the tenant will be required to deliver up the houses, &c., on the termination of the lease, in such a condition as will satisfy the landlord, then the rent will naturally be less in amount than it would otherwise be. In such an event the landlord should put the premises into first-class repair before they are taken over by tenant, unless an agreed sum of money is allowed the tenant to carry out such repairs for himself.

Names of Plants: *J. H. B.* 1, Skimmia japonica var.; 2, Rubus species, probably R. spectabilis.—*J. B.* 1, Heeria rosea; 2, Mercurialis perennis (male).—*Pinehurst.* 1, Daphne pontica; 2, Rhamnus Alaturnus.—*G. F. T.* Forsythia suspensa.—*R. T. S.* Colocasia antiquorum.

Narcissus telamonius plenus: *Geo. E.* Seeing that the growth is vigorous, and therefore, as we presume, quite healthy, the only conclusion we can arrive at in the matter is that the bulbs have reached a stage where division and replanting are essential to continued free flowering. Permanently-planted bulbs naturally break up periodically, and this much is proved by the many extra growths made by your bulbs. The non-flowering this season is because no flowers were made by the the bulbs last season, therefore it would appear that the breaking up of the bulbs was in progress at that time. It is at this stage that deterioration quickly ensues if the bulbs are not lifted and divided. If this is not done the stock may go on for years, and the bulbs being tightly packed together they will diminish rather than increase in size. Seeing that most of the bulbs have failed to bloom, this would be consistent with bulbs planted at one time, or of one age or size. If the circumstances are as you have described them you will get but little flower next year, and you should watch the other varieties to prevent a similar result. You can do nothing with those that have failed until the foliage shows signs of ripening off, when you may lift, divide, and replant the bulbs as soon as convenient. Meanwhile mark the positions of the clumps by placing sticks against them.

Nectarines and Peaches Dropping: *J. S. H.* Not knowing all the conditions to which the trees have been subjected we cannot say with certainty what is the cause of the fruits falling. It is certainly not due to fungus, and the more probable reason appears to be over-cropping the trees. If Peach and Nectarine trees fail to receive sufficient water at their roots they will also cast their fruits; the same trouble is sometimes experienced during the stoning period, but your fruits do not appear to have reached that stage. The Grape vine may have failed to ripen its wood, and this would explain its non-fruiting condition. See that the wood is thoroughly ripened this season, and you may have a crop next year. The failure of the Pears points to over-cropping last season.

Nonconformist Primroses: *D. C.* The Primroses you send are not uncommon but are very interesting, the five sepals which are usually united nearly all the way up to form a tubular calyx are here entirely disconnected, so that the calyx consists of five detached sepals which, moreover, are more or less leafy in character. In some of the flowers the five petals of the corolla are in like manner disconnected.

Petunia Seedling: *S. & M.* Although very rich, the colour is rather dull, and would not be likely to find favour with many growers.

Potatos: *H. F.* The Potatos are badly infested with scab (Oospora scabies), and were grown under conditions favourable to the development of this fungus. Where the land favours the disease, it can be kept in check by dusting sulphur in the rows when planting. It is better not to use scabbed Potatos for sets, but if this must be done, if the sets are steeped for half-an-hour in a solution of half-a-pint of formalin in fifteen gallons of water, all the fungus spores will be destroyed.

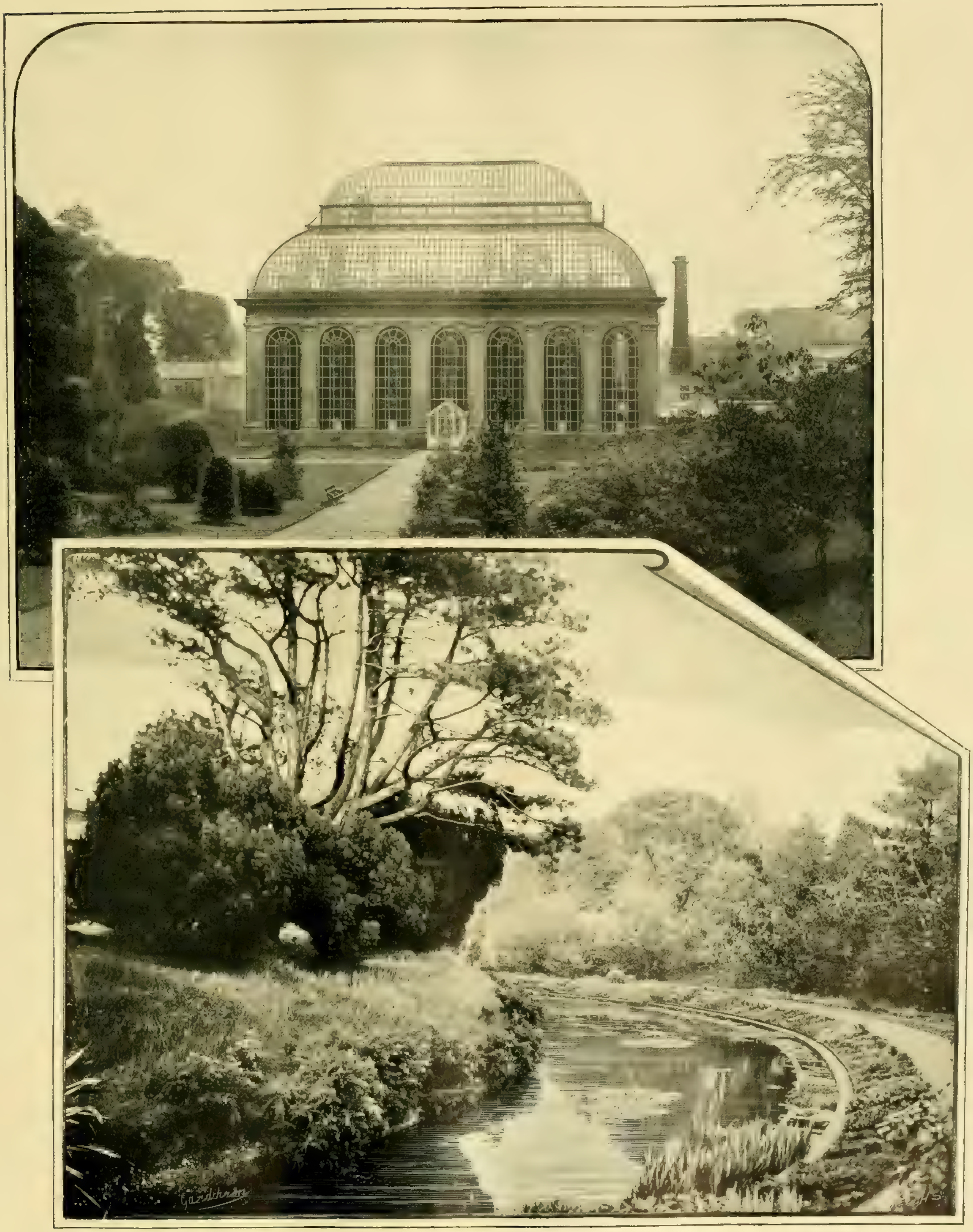
Spruce Fir Attacked: *T.* The injuries are the result of an insect—Chermes—whose presence is responsible for the galls seen. Burn any of the shoots badly affected and spray the remaining ones with petroleum emulsion. If the specimens are large trees, we are afraid your chances of combating the disease are small.

Temple Show: *W. D. C.* The Royal Horticultural Society's Show in the gardens of the Inner Temple, Thames Embankment, will be held on May 29, 30, and 31.

Vines Diseased: *H. L.* The young growths are affected with "Browning" disease. See answer to *P. R. C.* in our last issue; also an article with figure in our issue for August 19, 1893, p. 217.

Communications Received.—C. S. C.—C. P., Ghent—W. H. W.—F. J. C.—B. S. W.—D. C.—Hans Gussow—Sir Michael Foster—W. B. Hartland—G. W., very common—P. & Son—W. G. S.—D. R. W.—S. D. B.—F. J. C.—A. H.—J. V. & Sons—C. T. D.—M. A.—A. A. W.—G. S.—G. L. N.—H. B.—King's Acre—C. R. & Son.—Peach Tree—R. B.—M. A. W.—S. C.—M. M. N. (Kindly send name and address, not necessarily for publication)—S. A.—A. Y. L.—W. A. C.—W. H. Y.—H. W. W.—C. G. G.—J. R.

For Market and Weather Reports see page x.



VIEWS IN THE ROYAL BOTANICAL GARDENS, EDINBURGH, SHOWING THE EXTERIOR OF THE GREAT TEMPERATE HOUSE, AND PART OF THE POND AS IT APPEARS EARLY IN SPRING.

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THE
Gardeners' Chronicle
No. 1,008.—SATURDAY, April 21, 1906.

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VINTAGE FRUITS.

NOW that a Government departmental committee is considering the economic side of fruit culture, and proposals have been made for the formation of a National Fruit and Cider Institute, it is to be hoped that the question of vintage fruits will receive a proper amount of consideration, and that a decaying industry may be restored to its former importance. Landowners and tenants alike will welcome some useful system by which to work; and such a system can only be devised from information derived from practical tests. Numbers of fruit growers at the present time practise methods handed down to them like family heirlooms, and with no other consideration than that which rivalry excites to produce something better than their neighbours. Certainly some little difficulty would arise in convincing the farmers and the cider makers to depart from their well-beaten track; but by perseverance and practical demonstrations this might be accomplished. It must not be expected that a sweeping revolution will result immediately, for one great reason—many of the varieties of so-called cider fruits grown at the present day are unsuitable for producing the best results. These must, therefore, be culled out, and good and well-known varieties substituted. The farmers in the extreme south-western counties will suffer mostly in this respect, for many have for numbers of years continued propagating and planting trees irrespective of quality, and whose only recommendation is that they are heavy croppers. Many growers are already heading down these trees and "working" upon them better class varieties, a practice which saves both expense and time. During my residence in cider-growing districts I have been impressed with the haphazard methods employed by most of those engaged in this industry. What is necessary is an experimental station, supported by a Government grant, under the jurisdiction of the county councils, in the various cider-producing districts. Land should be procured and planted with the most approved kinds, so that close observation may be kept upon the growth and fruitfulness of the trees and a strict analysis made of each variety for the purpose of determining the density of juices, the quantity of saccharine matter present, and the flavour of each individual variety. More than this is needed: laboratory experiments prosecuted by experts having a knowledge of determining the best and most suitable combination of juices to produce the best results. In all our breweries each individual brew is scientifically tested by qualified chemists, who know exactly what the results of the brew will be. In similar industries some such lines of procedure should be considered.

Considerable experience is necessary in the manner ciders should be managed, for different varieties are "fined" and bottled easier than others. An analysis of the fruit grown in one district could not be taken as a standard of quality for the whole country. I have no hesitation in saying that a cider manufactured from a given variety of Apple in one locality and showing a high percentage of saccharine matter and rich juices would elsewhere show a considerable diminution in these respects. Many of the fruits grown for vintage purposes at the present time possess no special quality, neither would they improve were they blended with other liquors. I cannot but think those ciders are injurious to the system which cause the drinker to contort his features in no pleasant manner, thereby denoting the draught is anything but palatable.

There are many cider manufactories in various Apple-growing districts which offer a ready market for the disposal of cider fruits. Some of the cider from these places is of a very high quality, but prohibitive in price to the general consumer.

There is no question but that the culture of cider Apples pays well in districts where the soil is suitable; for, unlike choice varieties of dessert and culinary fruits, which require to be carefully gathered and stored, vintage kinds do not require much labour and expense, excepting in the case of a few kinds.

Several varieties of Normandy cider Apples were obtained from that country by the late Dr. Bull, who prosecuted exhaustive enquiries to procure those of the highest quality. I am pleased to say I was one of the first to assist in "working" those scions in this country, and as they are not generally known I will mention some of the best.

Bédan-des-Partes is a large "bitter-sweet" of vigorous growth, very fertile, the fruits producing cider of the highest flavour and of a good colour. Argile Grise, Bramtot, Fréquin d'Audièvre, Rouge Bruyère are all "bitter-sweets," furnishing excellent cider. Michelin and De Bouteville are from the same source, but their juices are not so rich in quality. Bitter-sweet Apples are generally rich in saccharine matter; they, therefore, produce the sweetest cider, which is not always the richest, but by blending other suitable juices with them they increase the strength and richness of the whole, and in some cases enhance the keeping qualities.

Perhaps the best, certainly one of the oldest and most universally grown, cider fruits is Kingston Black ("Sifu" Black Apple of Somerset, or Taunton Black). It is probably planted more extensively than any other variety, and is one of those whose fruits can also be used for culinary purposes. In external appearance it is deep red, which colour sometimes penetrates into the flesh. It is an excellent cropper, and the liquor which it produces is of superior flavour. In the counties of Somerset and Devon this Apple is largely grown, and combined with the juice of a local variety named Hangdown produces excellent cider.

There are other vintage fruits which find a ready sale in the fruit shops and are largely purchased in Herefordshire for consumption in different parts of Wales. The best of this class is Cherry Pearmain, a second sized, handsome, and very prolific Apple of a bright cherry red colour, of good flavour and adaptable for making excellent cider. The trees commence to bear when quite small. All cider connoisseurs can detect the juice made from the old Foxwhelp Apple, a true Herefordshire favourite for making cider. This variety also cooks well and its juice has a high specific gravity, somewhere about 1.070. The following are a few of the older kinds which can be relied upon to give excellent results:—Broad-leaved Norman; Cummy Norman, one of the best; Comarne Red; Devonshire Bitter Sweet, and Strawberry Norman, a tree of peculiar habit, the growth assuming a form similar to that of an umbrella; Cocagee, etc. Some of these varieties surpass our ornamental Crabs for effect, and in prominent positions are both ornamental and useful.

While writing on the subject of vintage fruits the Perry Pear cannot be passed over, but what applies to the Apple also applies equally to the Pear. The juice of the Pear when properly prepared and blended equals champagne, and in some cases is superior to many brands of that wine upon the market. Its medicinal qualities are becoming more recognised by physicians, the neutralising acids being recognised as beneficial in cases of "stone," etc.

Perry Pears are not so particular as to soil as Apple trees are, and they can be planted where other fruit trees would fail, or in exposed situations. A variety named Butt is grown largely in Gloucestershire in very exposed positions, and rarely fails to carry a heavy crop of fruit. The Perry is strong and sweeter than that which is obtained from the majority of Pears.

What Foxwhelp is amongst cider Apples Barland is amongst Pears. This is a small-sized fruit, producing the richest liquor, with a flavour the regular consumer soon learns to know.

The variety of Longland gives a juice of a very high colour, different to the transparent fluid of many kinds. This Pear is also excellent for stewing purposes and for the making of preserves. For bottling purposes the variety known as Oldfield cannot be surpassed, for the juice keeps well and always commands a high price. Other kinds of perry Pears are grown, but none is superior to those already mentioned.

In many districts the culture of Perry Pear trees is much neglected, and the trees are not replaced when cut or blown down. When an impetus is given to the cider and Perry industries by the authorities who are charged with the welfare of our rural population, the producer as well as the consumer will be greatly benefited. *W. H. Clarke.*

TREES AND SHRUBS.

HYBRIDS OF RHODODENDRON GRIFFITHIANUM.

R. Griffithianum is a native of the Himalayan region, and is one of the largest-flowered Rhododendrons in cultivation [see fig. 94]. It is, however, not hardy except in favoured localities in the South and West, and, therefore, cannot be grown elsewhere out of doors, but in gardens where it will succeed it should be planted, as it is one of the loveliest of the genus. The flowers are borne in loose trusses of six to eight, and are, individually, from 5 inches to 6 inches across, of pure white colour when fully expanded and delicately scented. The leaves are from 8 inches to 10 inches long, oblong in shape, dark, shining green above and paler beneath. This Rhododendron is of a vigorous constitution, and, crossed with hardy kinds, it has given us some fine hybrids, and in time will undoubtedly furnish more. The hybrids are few in number, but include amongst them some of the best of the hardy Rhododendrons.

It is only within the last few years that the value of introducing the blood of R. Griffithianum into the old strain of hybrids has been properly recognised and appreciated by hybridists. The older hybrids—raised chiefly from R. arboreum, R. catawbiense, R. caucasicum, and R. ponticum—have been, and still are, very great acquisitions, as they possess brightly-coloured flowers, and are extremely hardy, but the continual intercrossing of these hybrids has rendered it difficult to obtain anything fresh in the way of habit and form, though variations in colour within certain limits can still be obtained. The use of R. Griffithianum has already given us a few hybrids that are from a week to a fortnight earlier in their period of flowering, and, although they are slightly more tender, they are still hardy enough to survive any ordinary English winter; moreover, they possess enormous, well-shaped trusses of flowers having great constitutional vigour and freedom of growth.

R. CYNTHIA (LORD PALMERSTON).

This old, well-established garden favourite has large trusses of rosy-crimson flowers and flattened, dark-green leaves, ovate in shape, 6 inches to 7 inches long by about 2½ inches in width. The flower-bud is about the size of a filbert nut, pointed, and of a reddish hue. The plant is of ordinary habit; that is to say, it is neither too spreading nor too upright in growth, but forms a symmetrical, well-balanced plant, the width of which is well-proportioned to its height. It is an extremely free bloomer, and can be relied upon to furnish a good crop of flowers every year. It is sometimes regarded as a hybrid of R. Griffithianum, but as there is no authentic record of its parentage it is almost impossible to assert this with certainty, but its large trusses of well-expanded flowers, the stout, sticky younger growths, its flowering period being about ten days before the bulk of other Rhododendron hybrids, and the general appearance of the leaves justify one in classing it as such, though there is probably not more than one-third of R. Griffithianum blood in it.

R. KEWENSE ×.

This is a strong-growing, spreading plant with leaves much resembling those of R. Griffithianum, and having white, well-opened flowers that are borne in loose trusses. When first expanded the flowers are of a delicate pink colour, but they change to white with age, while in shape and size they resemble those of R. Griffithianum, and are also very sweet-scented. The bracts of the young growths are of a bright red colour. The plant is rather more tender than the remainder of these hybrids, but it is worth growing in a sheltered situation for the beauty of its flowers and its bold, striking foliage. Another form of this hybrid exists with rosy-red flowers. R. kewense × is stated to be the result of crossing R. Griffithianum with R. Hookeri, but it is curious that two tender Rhododendrons should produce a hardy offspring.

R. MANGLESI (GEORGE HARDY).

This hybrid was raised by the late Mr. Mangles, and is the result of a cross between R. Griffithianum and R. album elegans, the latter being a catawbiense hybrid. There are two or three forms of R. Manglesi in gardens, varying in colour from pure white to rosy red, but the typical plant has long, upright trusses of pure white flowers with a few reddish spots on the upper petal. The truss of flower is very narrow in proportion to its height, and it is liable to become bent and damaged by wind or heavy rains. The individual flowers are from 3 inches to 4 inches across, and when the plant is in full bloom it forms a striking and attractive object. The leaves are 4 inches to 5 inches long by about 1½ inches in width, ovate-lanceolate in shape, pointed, and usually turned downwards at their edges. In habit the plant somewhat resembles album elegans, being upright, tree-like, and soon attains to a considerable size.

R. MRS. E. C. STERLING.

This is a near relative of Pink Pearl, having been raised from the same batch of seedlings, and, but for the advent of Pink Pearl, would probably have attracted greater attention than it now receives. The flowers are borne in upright conical trusses, and are individually from 3 inches to 4 inches in diameter, of a semi-transparent pinky-lilac colour, without spotting. The ovate-lanceolate leaves are 6 inches to 8 inches long, dark, glossy-green in colour, and turned downwards at the edges. In habit this plant is strong and spreading, and very free-flowering.

R. PINK PEARL.

This has been figured and described so many times in the *Gardeners' Chronicle* that it is almost unnecessary to do more than mention it. In habit it is the strongest-growing hybrid Rhododendron out-of-doors, is hardy in most localities, and is very free-flowering when it has attained a moderate size. The inflorescences are pyramidal in shape, and are composed of large, well-expanded flowers, each 4 inches to 5 inches across, of a pure pink colour with a few reddish spots on the upper petal. The leaves are from 6 inches to 8 inches long by about 2 inches wide, ovate in shape, stout in texture, and of a deep, healthy green colour. In point of constitution Pink Pearl is the strongest Rhododendron we have, and in the course of the next decade or two we shall undoubtedly see many fine hybrids in which it will have played an important part.

R. STRATEGIST.

This is a strong-growing plant of upright habit, but should be planted in a partially-shaded situation, as the foliage is very liable to burn in strong sunlight. The leaves are 6 inches or more in length by about 2 inches in width, dark-green in colour, and turned upwards at their edges. The flowers are of a delicate pink colour, and are borne in upright, conical trusses. This plant was raised by the late Mr. Standish, of Ascot, and R. Griffithianum enters largely into its constitution.

There are several other hybrids of R. Griffithianum that were raised by the late Mr. Mangles, but as they are not in commerce it is impossible to form any idea of their hardiness, though there can be no doubt as to their great beauty. Some have been named, for example, Dawn, Liza Stillman, Dulcie Daffan, Daphne Daffan, Mrs. Mallard, &c. In raising hybrid Rhododendrons the point to aim at is thorough hardiness, for it is of no use raising beautiful varieties if they are liable to damage from the sudden changes of weather experienced in Britain. *J. C., Bagshot.*

VEGETABLES.

THE SPRING CABBAGE CROPS.

The above vegetable is at this time of year so useful that there are but few gardens where these plants are not grown. The present crop some time since, say three months ago, promised, owing to a mild autumn, to be in a condition for use early, but this promise has been falsified, not so much by a severe winter as by the peculiar weather experienced. Thus the conditions have at times been very mild, and on other occasions there have been sudden sharp spells of frost, just sufficient to arrest growth and check an early supply. In these gardens the variety Early Gem is usually ready for cutting the first week in April, and a few heads were available at that date this season, but regular cutting will not be general until two or three weeks later, and the other varieties we select will then continue the supply. In some gardens a few days' delay to the Spring Cabbages may not be felt, but in those where large quantities are required daily, the earlier the Spring Cabbage turns in the better. Much of the autumn and winter supply of vegetables is now past, and anything in the nature of vegetables that can take their place will be found useful.

Culture.

I have named Early Gem as our earliest variety. It is a small kind with few useless outer leaves. We grow it on an open position, and it is protected by deep drills drawn at the time of planting. I recently saw another system of culture, perhaps better than mine. Large raised mounds were made, and in the hollows between them plants of an early kind were planted, while a late kind was accommodated on the summit of the mounds. Quite three weeks' gain was secured by this mode of culture. Not far from these gardens large breadths of Spring Cabbages are grown under unheated glass structures for market, but I fear it is not a great commercial success. Glass cannot be spared in private gardens for this crop. I have gained time by planting on a south border, and as soon as the seedlings are two or three inches high they are planted in rows—similar to the system known as pricking out—and about nine inches apart. They were ready this year for cutting the first week in March, about six weeks earlier than the general crop. I well remember an old gardener in the north sowing very thinly in a cold soil a few rows, and thinning the seedlings to about the distance named, the thinnings taken out being transplanted for a succession crop. The plants that were never disturbed were some weeks earlier, but I may add there was some loss by plants bolting in a mild season. This loss, however, is compensated by the earlier supply—and in heavy, cold, clay soils this mode of culture is worthy of trial. Cabbage culture is simple,

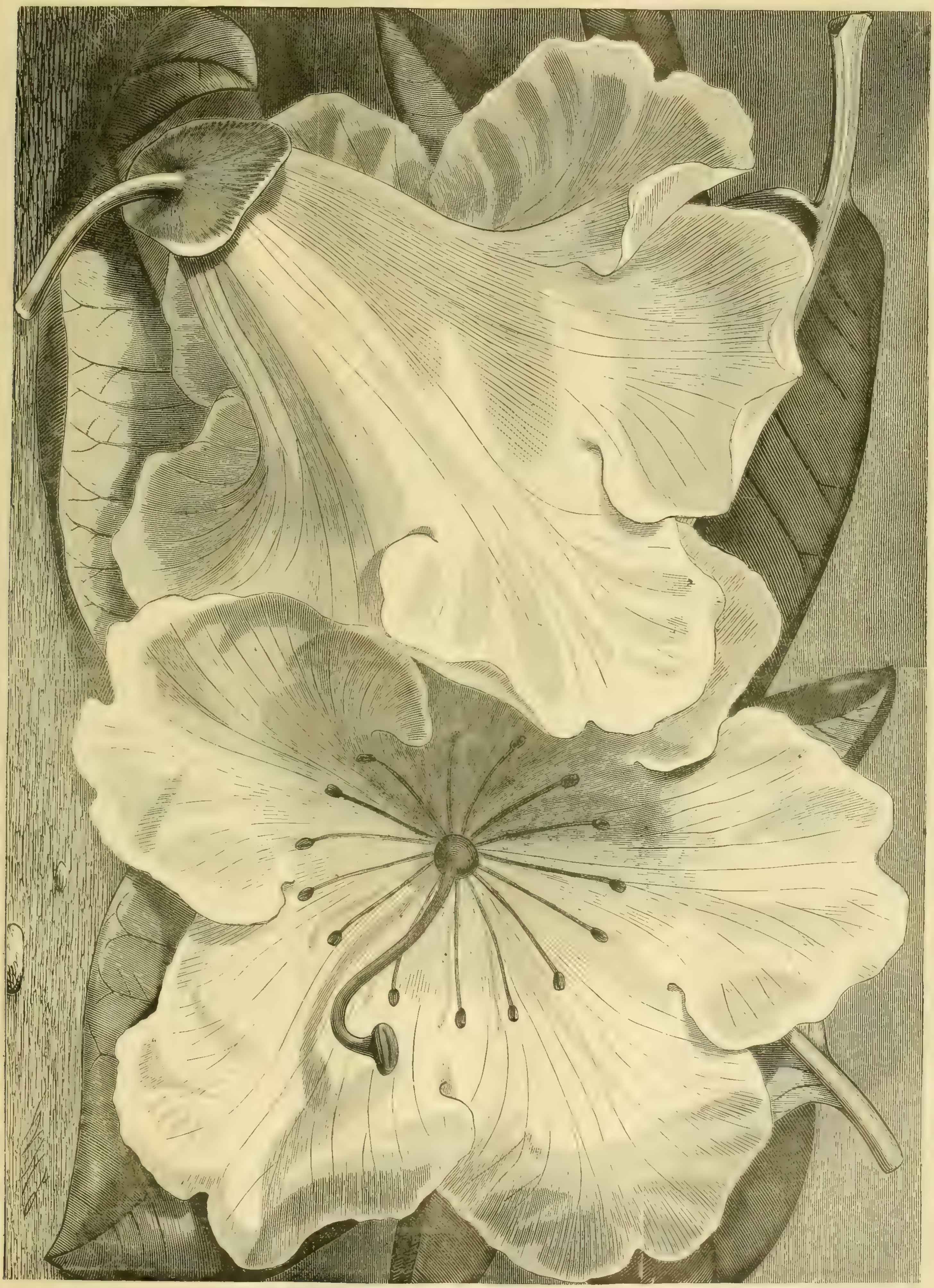

FIG. 94.—RHODODENDRON GRIFFITHIANUM, FLOWERS WHITE AND FRAGRANT. (See page 242.)

and I would add, there is no gain in coddling the plant. The plants for the main supply should be grown as hardy as possible. In these days we possess earlier kinds, and I think varieties of better quality, at least a small, better flavoured type of Cabbage suitable for table purposes.

VARIETIES.

Last season, owing to the kindness of Messrs. Sutton & Sons, Reading, I enjoyed the privilege of seeing almost every variety of Cabbage worth growing under trial. Newer varieties possess many improved qualities, such as greater freedom from "running" or "bolting" than the older types possessed. Again, each season is furnished with its distinct kind, and better Cabbages are now available for the table. I can remember the time when such kinds as Nonpareil and Drumhead were relied upon for an early supply, and how woefully they failed. They often bolted, and required a longer time to grow than the newer type, although I am aware that of late years an Improved Nonpareil has been available; but this, in my opinion, can bear no comparison to such kinds as Sutton's Flower of Spring, Sutton's April, Wheeler's Imperial, and the older, but excellent, Ellam's Early Dwarf. The introduction of the last-named was most valuable to private gardens, as it gave earliness in Cabbages, and it was not at all coarse. Early Gem, a variety above alluded to, is a seedling from Ellam's Early Dwarf, the other parent being Wheeler's Imperial, a small, good Cabbage, much grown in the West of England, and a very reliable variety. These small Cabbages, though excellent for the spring, are not the best for summer supplies, as later in the season they lose their desirable characteristics. In the spring they have few useless outer leaves, while their compact nature makes them profitable to cultivate, for many can be grown on a small plot of ground, and there is no waste. In certain districts peculiar kinds are favoured. For example, in Scotland and in the North of England, the Mein's No. 1 is a favourite variety, while in the South, Ellam's Early Dwarf is largely grown, and in districts where earliness and quality are considered the newer Sutton's April and Flower of Spring are fast becoming standard varieties. I notice that some of our leading growers have spring and August sown Cabbages. I would go further, for it is an easy matter to make four distinct seasons, spring, summer, autumn, and winter, each with its varieties. Thus there is no break in an all the year round supply of this vegetable, but to note the best for this purpose would take much space. Later I hope to refer to the value of autumn and winter Cabbages. *G. Wythes, Syon House Gardens, Brentford*

MARKET GARDENING.

MELONS AND MUSHROOMS *versus* TOMATOS.

IF, as Mr. Castle predicts (see p. 204), there will be a considerable reduction in profits on the Tomato this year, something else will have to be grown, partially, at the least, to take its place, and keep the glass houses filled with produce calculated to bring in fair returns. Why not try Melons of the kinds one meets with in the French markets during the summer and early autumn months? These consist of the thick-ribbed Cantaloupe variety, which grow to a weight of 6 to 8 lbs., and would sell readily either whole or cut into thick slices in the shops, or hawked in the streets, like other common fruits at a cheap price.

In my neighbourhood very fine Tomatos are selling, at the present date, at twopence per lb. (Inferior foreign produce?—ED.)

The Cucumber is becoming as cheap as the Tomato, and many a grower will have a serious quarter of an hour when he contemplates the probable prices the fruits will fetch in the market when they arrive in bulk. Very nice Cucumbers are now being retailed at threepence each, so we may guess pretty closely at what figure they are selling, and will sell, wholesale. The Briton, unlike the Russian and German, cannot make a meal off a fresh or pickled Cucumber and a chunk of black bread; nor will the children bolt off to school eating their "short prickly" as they go, as they do in Russia and Germany, and seem to enjoy it. We have, I suppose, nicer and more nourishing edibles of all sorts for that. Some growers with a lot of glasshouses may be tempted to make them, temporarily, into places in which to form Mushroom beds, and perhaps when boarded or matted over these places would not be too warm, with the windows and ventilators left open, for the production of Mushrooms. But the produce must be sold much cheaper than at present if it is to be bought by the millions. The price asked for Mushrooms at the shops, viz.: one shilling per pound in the summer, and even in the natural season, eightpence a pound, is ridiculous, and will have to come down to popular ideas of value. There is no comparison possible between the cost of production and the rate per pound asked for at the present day. Prices to the retail purchaser are not less than they were 40 years ago, when I observed, in a market garden at Fulham, 40 bushels of Mushrooms gathered on a winter's morning from a few beds, each of about 80 yards long, made in the open air. These sold for £1 per bushel, and there were two such gatherings per week for a month. Those were golden days for the London market men that are not likely to return, and growers will have to rely more on the masses, on small returns, and greater production, if they are to succeed in their undertakings. *Observer.*

NEW OR NOTEWORTHY PLANTS.

PLEUROTHALLIS BARBOSANA, NOV. SP.*

THIS pretty little new species flowered for the first time in Europe in the Orchid house of the Botanical Garden, Brussels, on March 25, 1906. It has yellow flowers in pluriflorous, distichous racemes. The leaves are small and thick at the edges, the extremities seem to be trilobulated, being notched, and the central nerve prominent in the notch. *Pleurothallis Barbosana* is allied to *P. pluriflora* which Cogniaux described in the Flora Brasiliensis III. 4 p. 492, and figured in the same work, pl. cxvi., fig. vi., after the drawings of Prof. Barbosa Rodrigues, of Rio Janeiro; but in the last species the two connate sepals are very acute, and the two lobes divergent; in the new species, the sepals are sub-obtuse, and the two lobes are convergent; the leaves from the latter species are also broader than those of the former. This novelty is a very handsome plant, it bears very many flowers. We have only seen one plant, bearing 12 racemes. *E. De Wildeman.*

PRUNING TREES AND SHRUBS.

(Concluded from page 227.)

THE PRUNING AND CARE OF OLD TREES.

One frequently meets, in old gardens especially, trees which, although aged and decrepit, are still precious because of their history and associations, or valuable, perhaps, for their size and rarity. There is no question but that the term of years of many such trees is shortened by neglect and wrong treatment.

A common source of decay in trees is owing to the stumps of limbs and large branches that have been wrenched off by storms, or even sawn off by hand. The raw or jagged surfaces afford a resting-place for moisture and for fungus-spores, with results that are graphically shown in figures 95 and 96. A limb or branch must always be cut off sufficiently close to the trunk or larger branch from which it proceeds that no stump at all remains. (See fig. 97.) The old but very pernicious practice of leaving a stump a few inches long is still too often adopted.

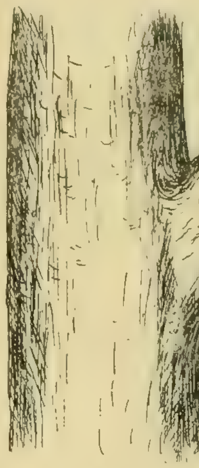

FIG. 95.—BRANCH SAWN OFF INSUFFICIENTLY CLOSE TO TRUNK OF TREE.

It is curious how such practices linger in spite of endless examples of their evil. In even so well-known a work as the last edition but one of *Thompson's Gardener's Assistant* this practice of leaving stumps was not condemned, but the "pros and cons" of the question considered. If a branch is to be removed at all it should be cut off at once in the way illustrated (figs. 98 and 99), that is, right back to the trunk or larger branch from which it proceeds. Unless this is done the stump of wood decays quickly and leaves a hollow place, such as is seen in fig. 95, or it decays more slowly, as in fig. 96. In both

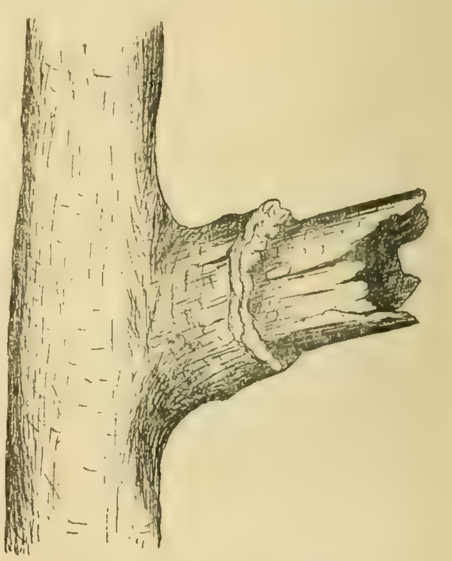

FIG. 96.—SHOWING JAGGED END AFTER STORM HAS BROKEN OFF A BOUGH.

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* *Pleurothallis Barbosana De Wild.* nov. sp. Parva, caespitosa; caulibus brevissimis, teretiusculis; folio parvo, carnosulo, oblongo-lanceolato, apice rotundato, emarginato, apiculato, inferne longe angusteque angustato, petiolato, obscure trinervio, nervo mediano distincto; usque ad 6 cm. long. et 12 mm. lat., pedunculo communi solitario, filiformi, erecto, usque ad medium multifloro (10–16 fl.), et 15 cm. long., basi spatha minuto incluso; bracteis minutis, ochreatis, glabris, acutis, 1-5 mm. circ. longis; floribus luteis, parvis subnutantibus, distichis, longiuscule pedicellatis, pedicellis capillaribus, 5 mm. circ. longis; sepalis tenuiter membranaceis, dorso oblongo-tricarinatis, 6 mm. circ. longis et 2–2, 5 mm. circ. latis, lateralibus fere usque ad apicem connatis, subrotundatis, lobis liberis circ. 2 mm. longis, non divergentibus, basi antice paulo gibbosis, bicarinatis, circ. 7, mm. longis et 3 mm. latis; petalis oblongis, obtusis, uninerviis, integerrimis, glabris, circ. 2 mm. longis; labello carnosulo, sesili, indiviso, oblongo-ligulato, basi angustato, apice rotundato, margine integerrimo, disco bilamellato, inter lamellas non puberulo, circ. 2, 5 mm. longo et 1 mm. lato; columna brevi, circ. 2 mm. longo, claviformi, erecta, crassiuscula, inferne leviter angustata, clinandrio tridentato. —Brasil P. Binot (v. viv.).

cases it will be seen that the attempts of the tree to cover the wound with new wood are futile, and every facility is afforded for damp and for fungoid parasites to enter the tree. In fig. 99 is shown the perfect healing of a wound where the limb has been sawn off close to the trunk. Fig. 100, p. 246, is a rough diagram showing the proper way to sever a branch at a fork. Owing probably to the fear of making a bigger wound, the cut is nearly always made at *B*. This is wrong, for, if the branch be thick, the new bark will never reach over the angle at *B* and cover the wound, as it would do if the cut had been made at *A*.

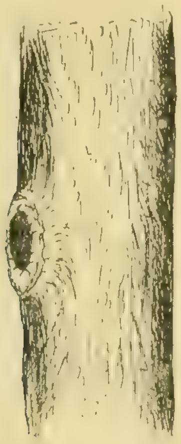


FIG. 97.—SHOWING HOW A BRANCH SHOULD BE SEVERED FROM LARGER BOUGH OR TRUNK.

DRESSING A WOUND.

The virtues of ordinary coal tar—not Stockholm tar—as a dressing for cut surfaces are not generally known. All the raw places left by removing branches or stumps of branches should be immediately covered with this antiseptic substance, and the coating should be renewed as often as is necessary till the wound is covered with new bark. The best armour that a tree can have to protect it against fungoid enemies is that which Nature has provided it, viz., its bark. But when accident has produced a flaw in the armour, the most efficient substitute is coal tar. The practice of nailing lead or zinc over wounds is a mistaken one. It affords no genuine protection, and hides whatever mischief is happening beneath. It is, in fact, about as efficacious as putting sticking-plaster on a festering wound.

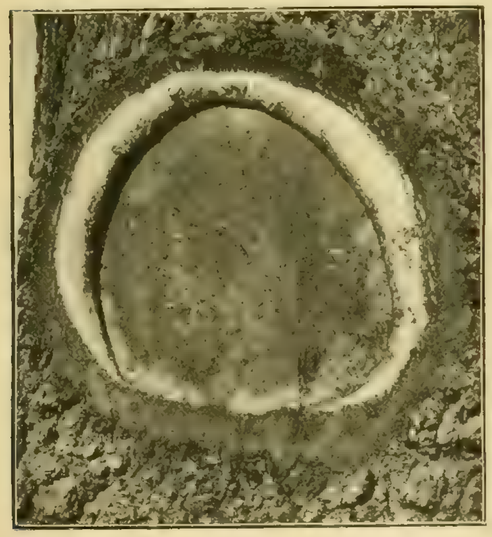


FIG. 98.—A BRANCH OF OAK SEVERED ROUGHLY A YEAR AGO, THE BARK HAS COMMENCED TO HEAL OVER.

If, as frequently happens, holes caused by the decay of stumps exist in tree trunks, they should be treated in the following way. Remove all, or as much as possible, of the decayed wood; wash the surface with a strong solution of carbolic acid; after this has become quite dry smear the surface with coal tar. This antiseptic treatment is intended to destroy the parasitic fungi and arrest the decaying process. The hole must now be filled up and made water-tight. If it be small, the best "stopping" is formed of a piece of oak made to fit; but large holes should be filled with cement. In either case a final coating of tar should be given. Except when the hole is very large, a new layer of bark will grow over the cavity when filled in the way described.

The question is frequently asked, what is the best season of the year at which to remove limbs of trees. For such dry woods as Oak, Beech, Hornbeam, &c., I find by experience the season does not matter at all, providing the wound is immediately tarred. But it is different with the more sappy woods, like Birch, Horse Chestnut, and many Conifers. The "bleeding" of such trees is often long-continued, and causes much injury if branches are removed in spring; while, in the case of some Conifers, it has even been known to cause death. The best time for such trees, and, indeed, the safest generally, is October and November. The flow of sap then is very much reduced, and time is allowed for the surface of the wound to harden and the coating of tar to set before active growth recommences. The removal of big limbs should be resorted to only when absolutely necessary. Except in the case of neglected trees, it constitutes no part in the routine of any proper system of pruning. But where limbs have been partially wrenched off by storms, or where questions of safety or other considerations necessitate their removal, it should be done in the manner and, preferably, at the time of year recommended above.

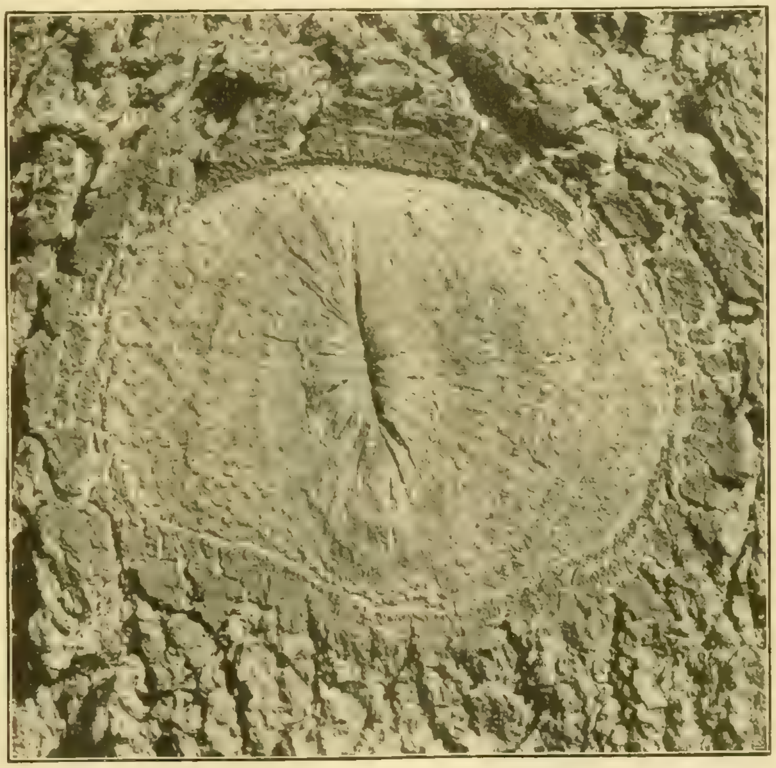


FIG. 99.—A BRANCH OF OAK 8 INCHES IN DIAMETER HAVING BEEN SEVERED CLOSE TO THE TRUNK: THE WOUND IS NOW COMPLETELY HEALED OVER.

Large branches should always be removed in at least two pieces. Usually they should be cut off in three or four; but this is a matter to be decided on the spot. One thing, however, is necessary for the proper finishing of the work, and that is the *last* piece to be sawn off should be light in weight, and not more than one foot or so in length. If the attempt be made to remove a big, heavy branch close to the trunk in once, it nearly always results in an unsightly wound, owing to the branch breaking away when the saw is about half way through the cut, and tearing away part of the bark on the trunk.

PRUNING OF FLOWERING SHRUBS.

As a general rule evergreen shrubs do not need pruning at all in a systematic way. Such plants as Rhododendrons, Arbutuses, Kalmias, and others of the Heath family, Berberis Darwinii, and B. stenophylla, &c., if they need pruning at all, require it only to improve or alter their shape, or to prevent their assuming too large a size for their quarters. In such cases pruning should be performed as soon as the flowering season is over.

Autumn-flowering Heaths, such as Calluna vulgaris, Erica Tetralix, E. vagans, E. ciliaris, &c., are sometimes improved by being cut back in spring before the new growth commences. This removes the old flowering twigs of the previous season and helps to keep the plants dwarf. It is the more necessary because of the long, lank growth these Heaths make in garden soils as compared with the hard, dense growth of the wild, moorland plants. They should not be clipped back further than the wood of the previous season.

DECIDUOUS SHRUBS.

The pruning of this class of plants, where it is necessary at all, has to be regulated in accordance with the flowering season of each species. For the present purpose they may be roughly divided into two groups, viz.: (1) Those that flower on the current season's growth; and (2) those that flower from the wood of the previous year. The first group is much the smaller. It comprises Ceanothus azureus and its varieties, Spiræa japonica and its allies, S. Lindleyana, Hydrangea paniculata, Genista tinctoria, &c. All these plants bloom in the latter part of the season; their flowering is, indeed, the culmination of the season's growth. In the second group the flower-buds are formed during the previous season and remain dormant throughout the winter. To it belong the Cherries, spring-flowering Spiræas, wild Roses, Barberries, and, in fact, all the earlier-flowering trees and shrubs, and this, of course, comprises the majority.

Briefly stated, the rule which indicates the time to prune all flowering trees and shrubs is this: Prune at such a season as will allow of the fullest possible period of growth before the next flowering season comes round.

The first group—those whose flowers are borne on the growths of the current year—should be pruned during winter or early spring, at any rate before growth recommences. The previous year's wood may, if necessary, be cut back "hard," that is, within a few buds of its base. Such hard pruning, however, is only desirable where the shrub is already as large as is required. Small specimens need the ends only of the shoots removing.

It must here be mentioned that a small proportion of our second group have to be pruned at the same time and in the same manner as that just described. These are the very earliest-flowering trees and shrubs, such as Forsythias, Peaches, Almonds, Prunus triloba, &c. Although they blossom on the wood of the previous year, they do so before new growth has started, and if they are cut back "hard" as soon as the flowers are past, it is only the old flower-bearing wood that is removed. The entire growing season remains for the development of the new wood.

We now turn to the remainder—those that flower on the previous season's growth, but concurrently with or later than the development of the new. These cannot be cut back in the way prescribed for the previous group. To do so early would be to remove all the flowers; to do so later would be to rob the shoots of their best season of growth. Therefore, such pruning as is done must be deferred till after flowering, and it must be a form of thinning rather than a process of shortening back.

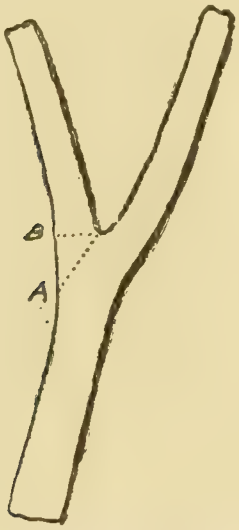


Fig. 100.—Removal of a branch at a fork. A cut made at B would be wrong. The line at A shows the proper direction for the knife or saw to take.

Thinning.

This term, as used in the present connection, implies the weeding out of all weakly, crowded, and superfluous shoots, and the removal also, if necessary, of a proportion of the stronger ones. Many shrubs, such as the earlier flowering Spiræas, the shrubby Loniceras, and Deutzias, have a natural tendency to thicken into a dense mass of twiggy growth. A judicious thinning out such as that just mentioned not only promotes the development of a cleaner, stronger growth, and, consequently, finer flowers, but it often gives also a more graceful aspect to the plant. It need not necessarily be an annual operation, but the question how often, and how much, must be left to the pruner's individual judgment.

There are some shrubs, of which Philadelphus Lemoinei may be taken as an example, whose growths have the power of renewing themselves from the base each year. Such may, if desired, be treated as one annually renewed. This Philadelphus flowers about midsummer, by which time the new shoots are 6 inches to 12 inches long. By cutting away the entire flowering shoots as soon as the blossoms are over, the plant is reduced to a cluster of new growths springing from near to its base. These now obtain the maximum of light and air, and during the season get to be 1½ feet to 2 feet long. Nearly the whole of this will produce flowers the following year, and is in turn cut away as soon as they are faded. By this treatment P. Lemoinei, which is naturally about 6 feet high, may be kept less than half as high, and be made to produce a very much larger crop of flowers. Crimson Rambler Rose and others of the Polyantha group can be treated in the same way. The "thinning out" form of pruning may be applied more or less to nearly all flowering shrubs; but the shortening back process must only be adopted for those that have a full season of growth before they flower. *W. J. Bean.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Dendrobiums.—Flowering plants of the genus Dendrobium have formed a prominent feature in the Orchid houses since the beginning of the year. The majority of the species and their numerous hybrids have now passed their flowering stage, but at Burford there is still a fair number of plants in bloom, though many of the following are now passing out of flower: D. Wardianum, D. crassinode, D. nobile, D. primulinum, D. cucullatum, D. Findleyanum, D. lituiflorum, D. signatum and some few hybrids. These and others that bloomed early will require attention as to re-potting; let this be done before the young growths commence to make roots, as these tender fibres are apt to get damaged if the operation is delayed. When re-potting well-established plants, remove as much of the old compost as possible, especially that at the back of the plants, cut away all old pseudo-bulbs that have bloomed, as they are useless to the plant. The pots to be used should be of moderate size, and about one quarter of their depth may be filled with pieces of well-dried fern, or peat-rhizome. In re-potting our Dendrobiums we find a far greater number of living roots entwined among the rhizomes than among the crocks used for drainage purposes. Dendrobiums root very freely in a compost of three parts sphagnum-moss to one part peat, to which may be added some finely broken crocks, and a little coarse sand. Plants that have deteriorated from some cause should be turned out of their pots, have all dead roots and decayed parts cut away and be re-potted into pots as small in size as will conveniently contain them. Afford plenty of the rhizome for drainage, and use sphagnum-moss and small crocks only for them to root into. For dwarf-growing varieties and those of pendulous habit small pans or the ordinary flower-pot with wire handles attached are the most suitable. We find these preferable to teak-wood baskets. Small pans or pots that can be suspended are also suitable for young seedlings, which for the first two or three years thrive well in a mixture of chopped moss, small crocks and sand, after which time and when they approach the flowering stage the addition of a little peat is an advantage. Water must be applied to all re-potted plants with special care for several weeks afterwards, and when the roots are seen pushing freely through the compost, the amount of water may be gradually increased. Dendrobiums, with but few exceptions, require the hot, moist atmosphere of the East Indian house or plant stove, where they should be kept well up to the roof glass. When the plants are re-established a good syringing, well up under the leaves, with tepid rain water at closing time on warm, sunny afternoons, will be beneficial. For many years D. Wardianum has proved a very difficult plant to keep in good health for long together, but now that for two seasons the plants at Burford have been growing in a temperature a few degrees higher than that of the Odontoglossum house, they have caused but little trouble. They have bloomed thoroughly well on the current seasons' growths, and are now in vigorous health. Plants of D. crassinode, also a difficult subject, will this season be subjected to the same temperature. Nearly all of the species and hybrids of the section of Dendrobiums above mentioned may be propagated by cutting off some of the old back pseudo-bulbs, selecting if possible those which have omitted to bloom, and laying them down on some sphagnum-moss in a hot, moist propagating case, or they may be cut up into small lengths and inserted thickly into pots filled with moss and sand. We also obtain some plants by laying the pieces of pseudo-bulbs on the surface-moss around Aërides, Saccolabiums, &c. When the new growths appear and they commence to emit roots, they are taken off and re-potted.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Manettias.—These pretty Brazilian stove climbers are much admired when trained upon a wire trellis, a pillar, or a rafter. The flowers are tubular, about an inch long, of bright orange-scarlet colour, and are produced in great profusion. On special occasions I have found the long growths, with their numerous flowers attached, to be useful in draping the pedestals supporting large vases, and they have a charming effect, with their bright green leaves, somewhat resembling those of Smilax, but larger in size. Their culture is simple if potted in a mixture of loam, peat, and sand in equal parts. Frequent syringings are necessary, red spider being their chief enemy. When the young shoots have attained to a foot or so in length, they may be attached to thin lengths of string leading to the apex of the roof, and in this way they are of neat growth, and are very handsome plants.

Vallota purpurea.—This Cape bulbous plant should find a place in every collection. As an autumn-flowering plant it is useful for furnishing the conservatory, or placing in vases in the dwelling-rooms. Immediately after flowering in the autumn is the best time to repot these plants. Avoid overpotting, as it is not conducive to healthy growth or free flowering, therefore do not disturb the plants oftener than is necessary. Now that the days have lengthened, the supply of water should be largely increased; but Vallotas, being evergreen bulbs, should not perfectly be dried off at any time. They may be grown well in cold pits during the summer months, providing the pits are closed early in the afternoon and the plants syringed freely. If a good stock of plants is kept some may be had in flower over several months. A compost adapted to their requirements consists of equal parts good loam, peat or leaf-soil, well-decayed manure, crushed charcoal, and coarse sand.

Heated pits and frames.—The crowded condition of these structures during the next few weeks will necessitate extra attention to be exercised in ventilating them to prevent the plants making weakly growth. The removal of the pit lights during bright days where Chrysanthemums and other subjects are being hardened off will help to keep the plants in a good condition. See that insect pests are not allowed to gain a footing; frequent light fumigations are the most economical in the end.

Frame Violets should now be propagated, selecting strong runners for this purpose. If red spider has been troublesome the runners should first be treated to a washing with a weak solution of soft soap and sulphur, after which, if placed in slight shade in a cold frame, and the atmosphere is kept close for a few days, they will soon make new roots.

General remarks.—Follow up closely the transplanting from the seed pans of Celosias, Gloxinias, Begonias, and all greenhouse and stove annuals. Use the syringe freely on most stove foliage plants, but avoid its use on Alocasias and others having metallic-looking foliage. Maintain suitable atmospheric conditions in the stove and intermediate house; give every encouragement to induce the plants to make free and clean growths. Keep the pots in the houses clean, and maintain a healthy condition of the plants generally.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

The Orchard House.—Some of the trees that were moved into this house early in the season will have set their fruits, even though the house is unheated. The advantage of pot trees over trees planted in borders is that they can be moved about whenever necessary for keeping them back or forwarding them to get ripe at a given date. Those which pass out of flower earlier than others may be arranged together in one part of the house, where less ventilation is employed, and where the trees may be syringed without wetting the flowers on other specimens. When all the fruits have set, the trees should be subjected to several slight fumigations to prevent green fly, for if this pest gains a footing in the points of the young growths it will cause the leaves to curl and prevent them fulfilling their proper functions. As the young leaves unfold, let a sharp look-out be kept for caterpillars, and pick off by the hand any that can be detected, it being impossible to dislodge them with the syringe. Each pot containing a tree should be elevated on two bricks, which will allow the water to pass away freely. Continue to keep the house carefully ventilated, preventing cold draughts.

Strawberries.—It is not at all difficult now to get fruits of good flavour, providing the plants have been properly prepared for forcing. From the present date until the end of June forced Strawberries will be one of the most valuable fruits for the dessert. There may be a difficulty at this season in finding room for the plants, and they should not be placed in shade; but they will succeed well on shelves, well up to the light in the other fruit houses. As the plants set their fruit, we thin them out to five fruits on each plant; tie these to a stake, and place the plants near to the roof-glass in the Cucumber house until the fruits ripen. When the fruits are swelling freely the plants need much atmospheric moisture, and frequent supplies of diluted liquid manure, and small applications of artificial manures; but when approaching ripeness only clear water should be afforded. Be careful to prevent red spider or the fruits will not be satisfactory. Plants coming into bloom should be pollinated daily, and the atmosphere around them be freely ventilated during the early part of the day. If mildew is troublesome dip the plants in a weak solution of sulphur.

Melons in frames.—The present is a good time to make up hot-beds of stable litter and leaves in pits or frames. Afterwards place a mound of compost under each light, using rather heavy loam, wood-ashes, lime scraps, and a sprinkling of bonemeal, and making the compost firm. When it has been ascertained that the temperature of the bed will not rise above 85°, set one plant on each "mound"; afford them shade for a few days until established. Syringe and water them with tepid water when necessary, and admit a little air when the weather is such as will permit of this being done

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Annuals and Perennials in the Wild Garden.—The present is a good time to naturalise some of the most appropriate annuals and perennials, either by sowing or planting. The results thus obtained are very effective, enhance the pleasure of this part of the garden during the summer months, and make a desirable continuation of the display obtained by the naturalisation of bulbs in the grass during the spring. A very simple yet excellent effect is easily obtained by laying bare a broad piece of ground and sowing it boldly with Shirley Poppies. In the course of a week or two, after the first shower of rain, the ground becomes green with the seedlings, and during a period of the summer months is a sheet of colour, which never fails to elicit the admiration of everyone. When preparing the ground, care should be taken to fork out the roots of any coarse-growing grasses or herbs which would be likely to grow stronger than the Poppies. The Forget-me-not (Myosotis dissitiflora) is a beautiful subject for this kind of work, and can be used either in a damp situation or in ordinary soil. A broad sheet of blue colour, in close proximity to a streamlet, gives an effect more easily imagined than described. Seed sown now in a shady border will produce plants fit for planting out next autumn for flowering in the following year. The Marsh Marigold (Caltha palustris), either dotted by the stream or in masses in a boggy piece of ground, for its rich colouring of yellow at this time of the year, is well worth propagating in numbers. The Foxglove is another very appropriate subject for naturalising in this manner, as it is undoubtedly one of the most stately and beautiful of our native flowers. Not only in large masses does it look well, but in isolated clumps in out-of-the-way places by the woodland walks and the sides of streamlets. It can be grown as an annual, but is best treated as a biennial, as it thus flowers much more freely. All that is required is to sow a few seeds when they are intended to flower, and they will look after themselves, and in most cases perpetuate themselves readily. Many an unattractive spot in the pleasure-ground can be made beautiful by means of the Foxglove. The Anchusa if sown now will produce a profusion of bright blue flowers, which with its borage-like foliage makes a suitable and welcome wild-gardening plant, while Aconites and Delphiniums, planted in suitable sites, will later on make lovely the surroundings. Where the common Primrose is not naturally abundant, a beautiful effect can be obtained by clearing a piece of ground on a slope or in a dell, and sowing it in sufficient quantity to ensure a carpet of these lovely and delicate flowers. The sowings should be made at the present time. Similar effects could be had with the common Cowslip and Oxlip.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Trees in Odd Corners.—See that no tree has escaped notice, remembering that a tree, if in an out-of-the-way corner, has a purpose to serve, and this it cannot do properly unless it is given attention. A good top-dressing or mulch may work wonders upon trees so placed. Examine newly planted trees, and afford ties or stakes if these have become detached. Where small details are observed, larger ones are never neglected.

Alpine Strawberries.—The ground apportioned to these plants should now receive a thorough cleaning. If the plants have been lifted out of the soil by the action of the weather, they must be made firm. At the same time apply a top dressing of some good soil with a little soot added around the "collars" of the plants. If seeds have been sown as advised on p. 135, the little plants should now be making their appearance. Guard against their damping at this stage by removing the boxes containing them into a somewhat drier atmosphere. It is not too late even now to sow seeds if this has hitherto been overlooked.

Crops on Fruit-tree borders.—Crops of early vegetables should not approach nearer to the base of the wall on which fruit trees are trained than a space of 4 feet, as room must be left to allow of the examination of the trees and attendance to their requirements. Moreover, the surface roots must not be disturbed, for these are the roots of primary importance, and their development should be encouraged. It is painful to see a suitable wall but partially covered with inferior grown trees, the result often of impoverishing the border with the roots of other crops.

Raspberry Suckers.—These should be removed with a fork, and only the necessary growths in close proximity to the old stool allowed to remain. By pushing a fork under the sucker, they can be pulled away easily without disturbing the main roots, but the ground should be trodden firm afterwards.

Disbudding Apricots.—Commence this operation by taking away all superfluous shoots, starting at the top of the tree, as this will give an impetus to any weak growths nearer the base. Apricots are sometimes partially grown on the spur principle, but even in this case it is necessary to take away some of the shoots. Old trees are frequently studded with fruit spurs, and where a good set of fruits has been obtained thin out all those that are in defective positions, but they may be left somewhat thicker than are Peaches and Nectarines, and in their case it is better to thin early.

Peaches and Nectarines should be frequently examined, and prompt measures applied for the discovery and eradication of any insect pests, as the trees may be practically ruined by these foes in a few days, especially when the weather is not congenial. Continue to draw down the blinds at night-time. It is quite possible that trees on light soils and at the foot of a south wall will need water. This, if found necessary, should be given in sufficient quantity without delay. Water for this purpose should be allowed to stand in the sun for an hour or more, or it may be warmed slightly by other means, but as the temperature of the earth is now only 45° it must not be unduly warmed.

The Lackey Moth (*Clisiocampa Neustria*).—This moth causes much damage to trees. The eggs are deposited in the autumn, in rings around the branches, the rings often containing from one to two hundred eggs. They begin to hatch about this time, and soon after hatching the grubs commence to form a fine web, enclosing some foliage, upon which they feed, and if not discovered and arrested they soon cause much injury to a tree. To combat them spray the trees with arsenate of lead mixed with petroleum emulsion.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Turnips.—A good breadth may now be sown with this vegetable with every chance of safety from injury through frosts—a well-tilled soil of fairly rich character is best suited to this crop. "Club" and "Finger and Toe" are responsible for many failures with Turnips, and these are generally attributed to the ground having been frequently planted with the Brassica tribe, but this is not always the case, as I have had ample proof. The best preventive is undoubtedly the growth of the plants in well-trenched soil that has had the bottom spit brought to the top annually, providing it is in good condition and not an inert mass of clay, or pure sand as the case may be. The breeding of many insect pests is much disturbed by this process, and the soil also is made in a better condition. Soot and lime are not effectual against the disease, but wood-ashes have a beneficial effect on the crop. The varieties having deep, fleshy bulbs are to be preferred during hot weather to the flatter varieties of which White Milan will explain what I mean. Snowball is one of the best of Turnips, and where yellow varieties are prized a good strain of Orange Jelly, or Golden Ball, should be selected. Later on Swedes should be sown for use during winter. These make a splendid vegetable, and especially the garden form of Swedes, the quality of which is much better than that of the field varieties.

Peas.—Plants from the early sowings are having a good time this season owing to the continuous sunshine and warm days, although frost in this district is of nightly occurrence, 9° being registered this morning (April 10). The soil is becoming dry, and unless there is rain shortly it will be well to sow seeds a little deeper and to damp the line before sowing to ensure quick germination, otherwise the supply may run short at a time when least expected. Mulching of this crop by stable litter cannot be too strongly recommended, and the best time to do this is immediately after applying the stakes. Fork the soil over and apply 6 inches of rough straw, thus conserving the moisture in the soil. On light soils much water will need to be afforded both at the roots and overhead.

Vegetable Marrows.—Those intended for cultivation in the open ground should be raised from seeds sown at the present time. There is no gain in sowing earlier unless protection can be given the plants by frames, as Marrow plants are injured by the slightest frosts. Sow the seeds singly in pots, and place the pots in a frame where the plants will grow slowly and sturdily. Plant them out at the end of May or early in June. The Sutton Marrow is a beautiful and refined fruit, and should be grown with Pen-y-byd. These are preferred to the large, coarse, white varieties. A small round variety of the green form, and named Perfection, also raised by the Reading firm a few years ago, is almost a counterpart of Pen-y-byd except in colour. These small varieties have the best quality. Everyone should grow the Custard Marrow, which is equally good and of very free fruiting habit.

Gherkins.—This small Cucumber requires much the same treatment as the Marrows, both as regards time of sowing and otherwise, but in cold districts a cool frame would be an advantage to the plants for a time, at least, when the plants are first put out.

Hoeing.—At no season of the year can so much good be done by the use of the hoe to kill the seedling weeds as the present time. Numberless seeds are on the point of germinating, and when growth has just commenced they can be easily killed. In addition, great good will be done in the aeration of the soil. Therefore use the hoe whether weeds are visible or not.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations. *The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, April 25 — Midland Daf. Soc. Exhibition at Birmingham Botanic Gardens in conjunction with the National Auricula & Primula Soc. Show (2 days).
FRIDAY, April 27 Roy. Bot. Soc. meet.
SATURDAY, April 28 Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—49·4°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, April* 18 (6 P.M.): Max. 50°; Min. 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April* 19 (10 A.M.): Bar., 29.7; Temp., 46°; *Weather*—Dull, with cold winds.

PROVINCES.—*Wednesday, April* 18 (6 P.M.): Max. 45° South of England and Ireland; Min. 40° Scotland N.

SALES.

WEDNESDAY—

Herbaceous plants, Carnations, Roses, Rhododendrons, Begonias, &c., at 12.
Fifty cases Japanese Lilies, &c., at 5, by Protheroe & Morris, at at 67 & 68, Cheapside, E.C.

FRIDAY—

500 Cattleya Percïvalliana Imported and Established Orchids, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 12.45.

Orchis. Under this title we have received a specimen number of a publication, edited by Dr. Udo Dammer, for the proposed German Orchid Society (*Monatsschrift der Deutschen Gesellschaft fur Orchideenkunde*). It is a folio publication, with a coloured plate of Backhouse's variety of Cattleya (Trianae) labiata. The introduction is written in French and English as well as in German, and shows that the publication is specially intended for amateurs and novices of various countries. "As long as the cultivation of these plants," says the editor, "is based on an empiric foundation, a sound basis on which to build will for ever be wanting." Allusion is then made, by way of illustration, to the remarkable observations of Noel Bernard, which go to show that the cultivation of certain Orchids cannot be satisfactorily carried out unless a certain root-fungus co-operates with the plant in the course of its growth. Progress can only be made by science working hand in hand with practical experience. The study of living plants is, after all, the most important matter, for pressed and dried flowers are only a poor substitute for the living reality. Influenced by such considerations, German Orchid-lovers have been considering the desirability of forming themselves into a society, one of whose objects shall be the publication of a periodical, in which consideration shall be given both to the scientific and to the practical side of Orchid culture. The present part is, therefore, to be considered in the light of an experiment, and, if it succeeds in enlisting the sympathies of the German Orchidists, the society will be formally established in May next. In the specimen number are articles on the Orchids of Kilimanjaro, by Mr. Volkens; New Orchids, by Mr. Schlechter; rare plants in the collection of Baron von Fürstenberg; on Coryanthes maculata, by Mr. Ledien, with an illustration; the cultivation of Disas; the growth of Orchids in apartments; a monthly calendar of operations, and other articles, all in German. M. Noel Bernard's article, to which we have already alluded, is in French. M. Bernard shows that Orchid seedlings are attacked by fungus spores and threads in a very early stage of their existence, and so far from being injurious, the fungi seem to be necessary for the full development of the Orchid. The fungi have in many cases been isolated and cultivated in suitable media. Hard lumps or "sclerotia" are seen to be formed, as well as the ordinary spawn-threads (mycelium). The fungi thus separated belong to at least three species, for instance, those obtained from the roots of Odontoglossum grande, Phalænopsis amabilis, and Spiranthes autumnalis are easily distinguishable one from the other. Those procured from Cypripedium insigne, hybrid Lælio-Cattleyas, Cymbidium Lowianum, and Aerides maculosum are all very like that found in Spiranthes autumnalis. M. Bernard concludes that all these fungi belong to the group known as Rhizoctonia, the species of which are known to affect various corms, bulbs, and tubers, and to the presence of which the Potato-scab has been lately attributed.

From what we have said, it may be inferred that the "Orchis" combines some of the features that were characteristic of the superbly-illustrated Reichenbachia, with others which we are accustomed to find in our valuable contemporary the *Orchid Review*, and we trust our German friends will, with their usual thoroughness, succeed in their attempt to enrich our Orchid literature and diffuse a scientific knowledge of this favourite group of plants.

OUR SUPPLEMENTARY ILLUSTRATION.—It is now about twenty years since the first wild garden at Kew was started. Its extent is about three acres, one-third being a high mound with long sloping sides. The greater part is shaded in summer by large deciduous trees. The situation is therefore a favourable one for spring effects, bulbs of various kinds thriving there, whilst a large, irregular border on the outskirts affords suitable conditions for Ferns, Cyclamens, Hellebores, Fritillarias, Colchicums, &c. In the grass under the trees there are thousands of Daffodils, which at the time the view from the north (shown in the supplementary illustration) was obtained realised the poet's description of "a waving sea." In the foreground is Anemone apennina, which a few years ago was only a small patch, and is now quite a large "colony." Earlier in the year, on the west side, the Snowdrops were the attraction. The south slope of the mound is covered with Crocuses, chiefly yellow, and they make a display which can be seen from distant parts of the garden. The process of selecting the most suitable plants has been the only satisfactory one, namely, putting in all kinds of things that were likely to thrive and discarding the failures. The only place in Kew where Snowdrops have established themselves is in this wild garden, although they have been tried in many other situations. The pallidus præcox Daffodil was a failure where the Tenby Daffodil now thrives. The greatest success of recent years has been with Christmas Roses, planted in the border on the west side of this wild garden. They have succeeded so well that five hundred more plants have been recently planted. *W. W.*

LINNEAN SOCIETY.—The next general meeting will be held on Thursday, May 3, 1906, at 8 p.m. The discussion on the "Origin of Gymnosperms," adjourned from March 15, will be resumed by Dr. D. H. SCOTT, F.R.S., Sec.L.S.

BOTANICAL PROFESSORSHIP IN PARIS.—In consequence of the retirement of M. BUREAU from the chair of Botany at the "Museum" (*Jardin des Plantes*), M. LECOMTE has been elected by the Academy of Sciences to fill the vacancy.

RIDING THE "BLACK KNIGHT."—On Easter Monday, according to the *Daily Graphic*, the "Black Knight" was seen in the streets of Ashton-under-Lyne. This Easter Monday apparition is a relic of feudal times. The manor lands in the fifteenth century were overrun by a yellow weed, destructive of the growth of corn. To extirpate this Sir JOHN DE ASSHETON instituted fines against those tenants on whose land it was found, and appointed his son, RALPH DE ASSHETON, to collect them. The tyrannical exactions of RALPH so exasperated the tenants that they rose in revolt and Sir RALPH was slain. The designation of "Black Knight," it is thought, arose from the fact that he rode a black charger, and on his annual visitations was attired in armour. At his death the office was abolished, but the custom was long perpetuated in the annual ceremony of riding the "Black Knight," a pageant of some pretensions, which, though still continued, has greatly deteriorated of late years, while public interest in it has much declined. Nowadays, "Black Knight" is associated with Sweet Peas, and Mr. STRAWSON knows how to extirpate the yellow weed without inflicting any exactions on the tenants.

THE COUNTRY GENTLEMEN'S ESTATE BOOK, 1906.—A thick octavo, compiled and edited by Mr. WILLIAM BROOMHALL, on behalf of the Country Gentlemen's Association. It comprises numerous articles on estate management, farming, forestry, gardening, and country life generally. Mr. CECIL HOOPER contributes an article on the valuation of Fruit-Plantations, and another on Land-Tenure and Rating Difficulties. The contents of the volume are, however, so varied that we must content ourselves with the mere mention of their presence and commend the whole work to the favourable consideration of those interested in the land and its products. The geological map is of too general a character to be of much use for practical purposes.

THE ELDER.—There is a saying that when the Elder is in bloom the summer is half over. We trust this does not apply to the Canadian species which we saw in full bloom in a London suburb on Easter Sunday.

INDEX FILICUM.—Part eight of this very useful publication has been issued, bringing the enumeration up to the beginning of the great genus, Polypodium. Such is the confusion in the nomenclature, and so great the divergence of opinion as to the limitations of genera and species of Ferns, that a list of this kind, giving names, date, and place of publication, together with the name of the author, and the native country of the Fern, has become indispensable to all interested in the literature of the subject. The work may be had through Messrs. WILLIAMS & NORGATE.

KEW.—The number of visitors to the Royal Gardens on Easter Monday amounted, we are told, to 91,600. We are glad to learn that little or no damage was done.

KEW BULLETIN.—The volume for 1904 is represented by a single number (dated April, 1906), and by several appendices which were published in advance of the main text. The part before us contains an article on the Soap-bark tree, Quillaya saponaria, on an India-rubber producing tree, Eucommia ulmoides, a native of Western and Central China, which has proved quite hardy at Kew, and various other interesting subjects. Number 3, for the year 1905, has also lately been issued, and contains a botanical monograph on the genus Kickxia, a Malayan group of rubber-producing plants, and on Funtumia, a corresponding group, the species of which are natives of West tropical Africa. The necessity of discriminating between these species is shown by the fact that some kinds are worthless as rubber producers, whilst amongst others, such as Funtumia elastica, is one of the most important sources of West African rubber. By the publication of these and other numbers, to which we have previously alluded, with their several appendices, the periodical is being brought up to date in such fashion as will permit of the numbers being bound in proper sequence.

OFFICIAL REPORT ON KEW GARDENS FOR THE YEAR 1860.—The Kew set is deficient in Sir WILLIAM J. HOOKER's Report for 1860, so that the Director would be exceedingly obliged to any person who could make good this deficiency, which is probably owing to a change in the method of dating from what had previously been in use. It would probably be dated January, 1861. Communications should be addressed to Mr. W. BOTTING HEMSLEY, Keeper of the Herbarium and Library, Royal Botanic Gardens, Kew.

THE HEART OF RAMESES II.—The subject has no direct relation to horticulture, but is so remarkable that we may be excused for referring to it. M. LORTET and others have had the opportunity of examining the contents of certain Egyptian vases, and among them found the heart of the great monarch. It was so hard that a saw was needed to make sections of it. These sections further prepared for microscopic examination revealed indubitably the muscular structure of the heart. RAMESES II. is stated to have died 1258 years before the Christian era. The embalment in natron, resins, spices, &c., was so perfect that, as we have said, the minute structure of the muscle is admirably preserved. The vases and their contents are now in the Museum of the Louvre, and the description from which we have taken these details is contained in the *Comptes Rendus of the Academy of Sciences* for April 2, 1906

NURSERYMEN, MARKET GARDENERS' AND GENERAL HAILSTORM INSURANCE CORPORATION, LTD.—The Secretary, Mr. A. J. MONRO, informs us that the eleventh annual general meeting of the shareholders of this corporation was held at the registered offices, 41 and 42, King Street, Covent Garden, W.C., on Friday, the 6th inst., when Mr. HARRY J. VEITCH presided. A dividend of 5 per cent. and a bonus of 2½ per cent. for the year was declared; £1,500 was placed to reserve fund, and £332 18s 10d. carried forward. The reserves now amount to £10,500. There were five claims during the year, one of which amounted to over £100. The claims came from various parts, ranging from Canterbury, Kent, to the Orkney Isles. The investments in stocks amount to £12,545 14s. 7d., and freehold ground rents to £8,429 19s. The shareholders expressed their satisfaction at the strength and satisfactory condition of the corporation.

PORTRAITS OF BOTANISTS.—Dr. WITTROCK, of the Stockholm Botanic Garden, has published a second volume of portraits of eminent botanists, from ARISTOTLE to MITSUTARO SHIRAI. Some of the portraits are of large 8vo. size, whilst others are small enough to allow of six being given on one plate. Botanists of all nationalities are included, and short biographical notices are given. The arrangement is according to countries, but an alphabetical index to the two volumes is supplied. The original portraits, we gather, are in the Museum of the Stockholm Botanic Garden, and, in spite of some omissions, are of extreme value to working botanists. Not the least interesting are the portraits of the father, mother, brother, son and two daughters of LINNÆUS. The varied costumes are, in their way, as noteworthy as the delineations of the features of the distinguished men.

THE "HURST & SON" MUSICAL SOCIETY AND THE GARDENERS' ROYAL BENEVOLENT.—On May 3, at the Cripplegate Institute, Golden Lane, E.C., the "Hurst & Son" Musical Society will produce an original musical play entitled "On Puddleton Quay," written and composed by Mr. EDWARD SHERWOOD, lyrics by ROBERT MAIN, in aid of the Gardeners' Royal Benevolent Institution and the Corn Exchange Benevolent Institution. The performance will commence at 8 p.m. We hope that a substantial sum will be obtained for these charities. Tickets may be obtained of the Hon. Sec. (F. A. WASHINGTON), 152, Houndsditch, London, E.

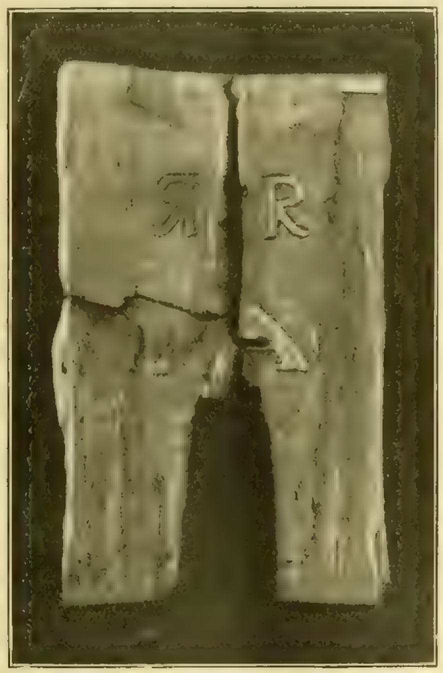


FIG. 101.—BURIED INSCRIPTION IN TRUNK OF BEECH.

PROLIFEROUS STOCKS.—Mr. DICKS kindly sends us a specimen of a double-flowered Brompton Stock in which not only are the petals increased in number but the central axis of the flower is prolonged into a small shoot bearing subsidiary leaves and flowers. The pistil is absent, being replaced by the supplementary shoot. Such a condition of "median floral prolification" is not uncommon in Wallflowers and other Cruciferous plants, and is the result of the resumption of growth after it had been checked in the ordinary course.

PRUNUS PISSARDI.—The Rev. DAVID R. WILLIAMSON writes to us as follows on April 15:—"Since writing the article which appears on p. 225 of the *Gardeners' Chronicle* I have been much interested to learn from a communication of my friend, Mr. S. ARNOTT, of Dumfries, that Prunus Pissardi has fruited in Scotland, at St. Mary's Isle, in Kirkcudbrightshire. This, I think, must be an event sufficiently rare in our Scottish climate judging from my own experience of this Oriental tree. It fruits not uncommonly near London."

BURIED LETTERS IN TRUNK OF BEECH TREE.

THE illustration at fig. 101 shows a portion of the trunk of a large Beech tree, which was split for firewood, and which was afterwards presented to the museum of the Royal College of Surgeons, in 1903. At some time the bark had been cut away in the form of the letters shown, and over the denuded surface the wood callus has grown, the yearly additions of wood being afterwards formed continuously over the trunk. The markings in the wood appear to be due to the necrosis of a thin layer of the wood once exposed, the subsequent cleavage having taken place through this so as to give rise on one piece to a reverse of the letters cut. The wood immediately around that dead is of a deep brown colour. In the middle of the "A" the original bark has been left; this has been afterwards covered over and buried beneath the growth of callus from the surrounding cambium. The letters lay 6½ inches below the surface.

SOME YELLOW-FLOWERED SAXIFRAGAS.

AMONG the members of the genus Saxifraga that flower from early January onwards for the period of three months or more, yellow-flowered varieties are among the most interesting, and, in not a few instances, the most valuable as garden plants. The lover of choice and rare "Alpines" never tires of these dainty gems, some of which are exceedingly slow of growth and require years before attaining a goodly size. Thus a specimen of S. aretioides primulina which I exhibited at the Drill Hall, Westminster, some years since, was the result of sixteen years' continuous growth. It was growing in a 6-inch pot, and carried between eighty and ninety flowers, each but 2 inches high. Yet it was worth waiting for, and its peer will take many years to produce. Though easy of cultivation when carefully treated, it not infrequently happens that fungus will destroy some of these rare plants before the cultivator is aware of its presence. Such a growth was responsible for the loss of the unique example referred to above. S. cæsia, a very beautiful white-flowered species, is frequently attacked by these insidious fungi, and it usually happens that the plants become a prey to such diseases when wintered in badly-ventilated frames. To ensure perfect health, top ventilation alone is by no means sufficient. Years ago, when in charge of a famous collection of Alpine plants, I found that many of them appeared far from content with their treatment in the matter of ventilation, even though the lights were constantly raised both at the back and the front, some 5 inches above the wall plate of the frame. As a result of this experience I had constructed what I still believe to be the ideal frame for these plants, one in which the walls both back and front were freely pigeon-holed, in addition to the lights being raised overhead as before. This arrangement admitted abundance of air among the plants, and it was a pleasure to view the silvery Saxifraga growing in these conditions, the encrusted character of the plants being developed to a marked degree. The plants were simply placed in the frame and the pots were never plunged. The late Mr. James Atkins, of Painswick, plunged his choice plants in chippings from magnesian limestone, from which all the fine particles had been eliminated. The plants were wintered in a series of small span-roofed frames, each of which was open at either end, and with other means of ventilation provided at the top. In this garden, high up in the Cotswolds, the plants wintered well.

As a potting medium I employ light, not heavy, loam, to which abundance of sharp grit or sand is added, together with a little old mortar or soft-brick broken to powder. During a somewhat long experience, I have experimented much with soils and with admixtures of soils; I find disastrous results follow the addition of burnt ash from the garden rubbish fires. Though employed quite sparingly—and at the time I may have thought even judiciously—it was in the nature of poison to the roots, and some plants even perished outright. I soon discovered that something was wrong, and the plants were shaken out and washed free from the soil, when I found many root fibres quite dead. Charcoal and leaf soil should be used sparingly, while the latter is best discarded altogether, unless of first quality and made from Oak or Beech leaves. Frequently I have employed with advantage a little very old, finely-sifted manure, not only in the soil for potting, but in that used for top-dressing or rubbing into the crowns in early winter. Perfect drainage is essential, and, given this, pots of a larger size than are usually employed are a decided advantage. To the foregoing comments on the general cultivation of the plants I have but to emphasise the necessity for firmness in potting, while rare kinds should be wedged between stones, to ensure fixing the tufts in position.

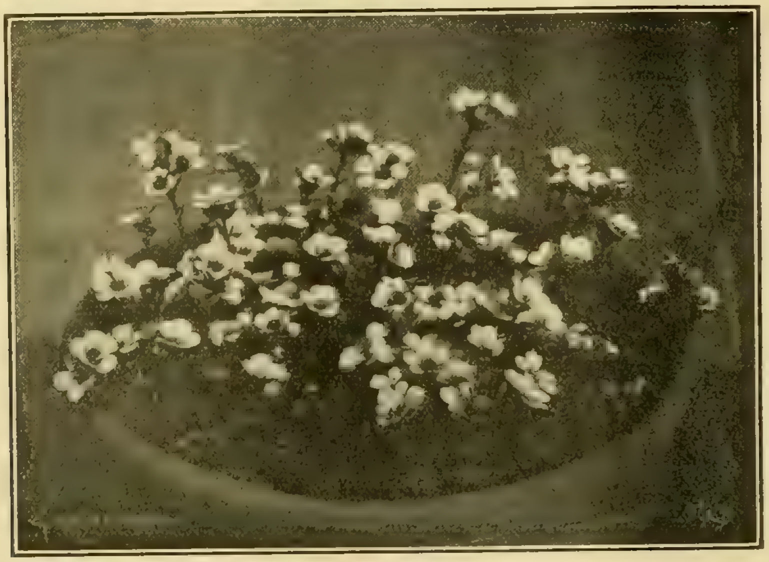


FIG. 102.—SAXIFRAGA BOYDII AS CULTIVATED BY MR. JENKINS.

VARIETIES.

The following are the more important of yellow-flowered Saxifragas:—

S. apiculata (see Fig. 103).—This is one of the most valuable of winter or early-spring flowering varieties, not merely by reason of the abundance of its blossoms, but equally because of the lengthened season of its flowering. In very mild winters the earliest blossoms are expanding in December, and though again and again repelled by frost, it will use every endeavour to succeed, and will still be found crowded with blossoms in March and April. This is one of the most easy Saxifragas to cultivate, and in not a few gardens will succeed perfectly well if planted on the level ground. In localities where chalk abounds, the tufts of growths perish in their centres from extreme summer dryness, and it will be found on examination that these portions are quite lifted out of the soil. The remedy in such circumstances is to plant low down in partial shade and to practise frequent division. There is no reason why gardens should not contain yard-wide patches of this beautiful plant, all that is necessary being to divide the plants freely in early spring and to plant the spring rosettes low down at 2 or 3 inches apart. The blossoms are coloured primrose yellow, and are produced in a crowded head on peduncles 2-3 inches high. S. apiculata was first grown under the name of S. luteo-purpurea, and many years back the Royal Horticultural Society gave it a First Class Certificate under that name.

S. a. Mayli is considered as synonymous with the above species by the Kew authorities, but it differs in that it always flowers at a later season—it rarely, if ever, flowers in mid-winter, and in its somewhat better shaped and more deeply coloured flowers. For garden purposes the two plants are widely distinct.

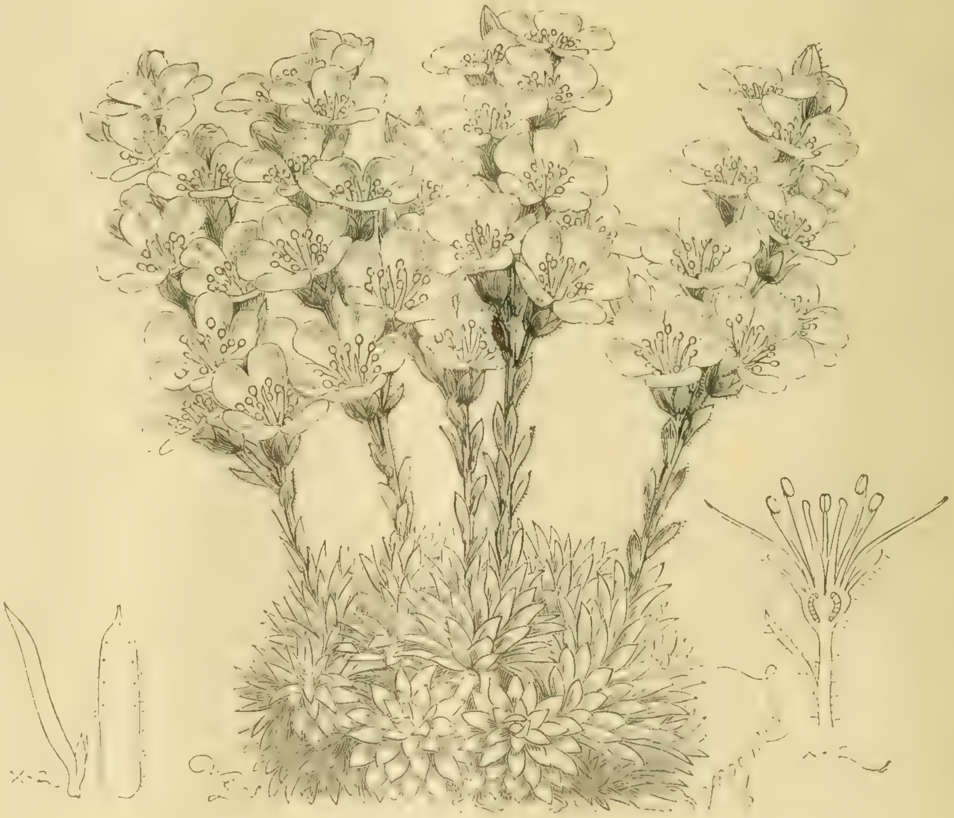


FIG. 103.—SAXIFRAGA APICULATA; SYN. LUTEO-PURPUREA. *Hort.*

S. aretioides.—A diminutive species from the Pyrenees, with greenish-yellow coloured flowers on peduncles an inch high. Its leaves form dense tufts of silvery rosettes, from which the leafy glandular peduncles spring. The flowering period is during April and May. As a decorative subject the type is far out-distanced by S. a. primulina, a very rare form with rich yellow blossoms that measure half-an-inch across. This exquisite form was raised at Painswick by the late Mr. J. Atkins, and is to-day one of the most rare of the yellow-flowered Saxifragas. It is worthy of note that a large proportion of the root fibres of those diminutive kinds will in all healthy specimens be found at the bottom of the pot, sure indication of their preference for the cooling influence of rock or stone. Summer moisture in plenty, in partial imitation of the abundant watering from the melting snow of the mountains, must not be overlooked as part of their requirements.

S. Boydii × (see Fig. 102).—This lovely hybrid was raised from S. aretioides × S. Burseriana, the latter being, I presume, the pollen parent. It is without doubt the prince of yellow-flowered Saxifragas. The plant, by no means new, is still rare, and some growers find much difficulty in cultivating it. Should the raiser of the plant read these notes, I would like him to inform me whether the pollen employed in effecting the cross was all taken from one plant. If Mr. Boyd is unable to supply this information, could he enlighten us as to whether the original stock was raised from one seedling only or from more than one? I ask the question because I have seen one form of S. Boydii quite distinct in leaf growth from another more commonly known and grown. The flowers of S. Boydii are as large as a sixpence, and are lemon-yellow in colour. The strongest stems seen in the picture had four flowers each. A few only had five.

S. Elizabethæ ×.—A hybrid having S. sancta and S. Burseriana for its parents. A free and good grower, intermediate between the parents, and possessing a sturdy and free flowering habit, in which the first-named parent is greatly in evidence. I know of no yellow-flowered Saxifraga presenting such a mass of blossoms as this variety. The colour is a shade deeper than that seen in S. apiculata.

S. Ferdinandi Coburghi.—A very rare species from Macedonia, with golden-yellow flowers of great beauty. The peduncles are from 1-2 inches high, somewhat forked, and bearing from two to four flowers each. The individual rosettes of leaves may be compared to a loose-growing plant of C. cæsia, the close, intricate character of the latter not being found in the above-named species. The plant appears likely to prove easy of cultivation. The flowering period is during March and early April. The pronounced silvery character is a marked feature of the plant.

S. juniperifolia.—The yellow-coloured petals are of small size, and are scarcely more conspicuous than the anthers. The rosettes of dark green leaves are acutely pointed, and are spiny to the touch. An early and very shy bloomer of quite easy cultivation in ordinary soil. Native of the Caucasus.

S. Kotschyi.—A free growing species from Asia Minor, with large and exceedingly pale yellow coloured blossoms. A good grower in deep, gritty loam.

S. luteo-viridis.—A very rare species from Transylvania, the greenish-yellow petals fully justifying the specific name. The leafy peduncles are usually three-flowered, the petals being bluntly ovate, and slightly dentate. It succeeds best in very gritty loam when wedged between pieces of sandstone. The true plant is but rarely seen in cultivation. The flowering period is early April.

S. sancta.—A well-known species from Macedonia.. The plant forms a perfect carpet of green on the soil. The stems, 1 inch or more high, are many flowered, the petals being small, ovate, and of a rich yellow colour, with the golden anthers making quite a display during March and April. The plant is easy of cultivation, and may be increased to any extent by division. It grows freely in cool and shady positions.

S. aspera, S. Hirculus, with its variety major, and the pretty S. cymbalaria are other species with varying shades of yellow-coloured blossoms all worthy of note in passing. *E. H. Jenkins, Hampton Hill.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Chrysanthemum "W. J. Crossley."—This new variety was the result of my crossing Mafeking Hero with the pollen of Mrs. F. W. Vallis, and those who are growing it may be reminded that it is later in forming its crown bud than Mafeking Hero and should be stopped about April 10 or as soon as possible. Confine each plant to two shoots and secure the next flower-bud which appears. *Arthur Calderbank.*

The Winter-Flowering Carnation Society.—Respecting the proposed new Carnation Society, may I venture to suggest that they style themselves the Perpetual-Flowering Carnation Society, as the term Winter-flowering is not comprehensive enough, and does not do the plant justice. There is no season in which this particular section of Carnation will not flower. The plants cease to flower only when they are exhausted. Those who wish to substitute this section for the border varieties can easily do so by cultivating the plants inside and out of doors, and the returns from them will be far greater than those obtained from border varieties. They are admittedly not quite so hardy as the border varieties. *R. C. Sanders, Halton Gardens, Tring.*

Seeding of Lilium candidum.—With reference to the note on p. 233, I have fertilized flowers of this Lily every year for many years, without ever getting a seed, or even inducing the capsules to swell. In my present garden, where Lilium candidum does extremely well in almost any situation, is absolutely free from disease, and flowers freely every year, I had renewed hopes. In 1903, several capsules swelled more or less, but contained no seed. In 1904 I had several pods of very doubtfully fertile seed, and one with about 6 to 10 plump seeds, one of which germinated and grew for about nine months, and then succumbed, apparently to frost. In 1905, two hand-fertilized flowers produced large capsules containing about 100 seeds, and to my surprise some 10 or 12 other flowers on various plants about the garden set pods of fertile seed, though not so much nor such good seed as the hand-fertilized flowers. All these were sown last December, and some are now germinating. No other Lilies were out at the same time; in fact, I can grow very few other Lilies here, being on a shallow, hungry, chalky soil. There is, therefore, in my case no question of Lilium candidum needing to be fertilized by L. testaceum before it will set seed. From the fact of Mr. Henry also obtaining seed in 1905 it seems, either as if there were some very general circumstances, other than climate or soil, favourable to seed production in 1905, or else that it is a question of the age of the stock. Possibly it is an analogous case to that of Anemone japonica, which for years was never known to set a single seed, and I am hopeful that if I succeed in raising these seedlings they will prove to be as free seeders, comparatively, as are Anemone Lord Ardilaun and its descendants. *A. J. Bliss, Orpington.*

Plant Distribution of the Royal Horticultural Society.—Apropos of the remarks on p. 218, a box of plants has just been received by a Fellow from Wisley. It contained five scraps, but not one of them of the species selected and notified in List No. 1 or in the supplementary list. Surely the society need not go to the expense of printing a list of plants for distribution, and increasing the farce by sending out things that are not wanted. Who can be responsible for this child's play? *M. A. W.*

Daffodils in the Open Air, Season 1906.—It will no doubt be useful to many of your readers to learn from this southern climate of ours something of the forwardness of the Daffodil bloom during the past month or two. I give the order in perfect rotation as they were gathered. Some of the sorts are not yet in quantity; when they become plentiful, the market men will reap the benefit. After all, a small early bloom coming in before Christmas under gentle forcing is more valuable from the trade point than the immense flowers that carry on the season: (1) Cervantes, perianth and trumpet pale yellow; (2) North Star, perianth and trumpet yellow; (3) Alpha, a small neat bicolor with dark green foliage. All in flower first week in February. (4) Earliana, a lovely bloom, but not plentiful; (5) Tuscan Bicolor, like a small Horsfieldi, very early; (6) Flossie, an improved Tenby variety; (7 and 8) Crown of Wealth and Winter Cheer, both of the spurius class, middle of February, when plentiful, this will be of great value; (9) Golden Spur, a well-known fine market sort; (10) Irish Guards, a tall, vigorous grower, very scarce; (11) Claddagh, for pots this is very exquisite; (12) Buttercup, has small, stiff, erect bloom. Then the early variety of Poets' Narcissus, viz., præcox grandiflora, is of great value. It is quite over now out of doors, but was in flower in early March in a sheltered spot; under glass it comes in before Christmas, and is large and fine for cutting. *Wm. Baylor Hartland, S.W. Cairn, Cork, April 1, 1906.*

Aspidistra Seedlings.—I enclose a seedling of Aspidistra found self-sown in the midst of an old plant, where by some means or other two flowers evidently were fertilised, an uncommon occurrence. The little plants I found in two groups of seven each when re-potting the old one, and although none is more forward than the enclosed, several show already a good variegation, while the majority of them are green. As attempts to fertilise the flowers of Aspidistras generally result in failure, I thought the above fact worthy of note. How came these two (or more) flowers to be fertilised, I wonder? *H. Schneider.*

Independent Boiler.—I have read with much interest Mr. Divers' letter in the *Gardeners' Chronicle* for March 24. I suppose Mr. Divers has the sections of his boilers left quite open, but I would strongly recommend all gardeners using any of these independent boilers to have them well covered in with asbestos. We have recently had a Mona boiler (8 sections) put in here, and we tried it a few days as it was, but after it was covered in it made quite 10 per cent. difference to the heating power. There was also another independent boiler here which I found was not really equal to what was required of it, but we had a thick covering put on this also, and it has made a vast difference. I think these boilers are a great improvement on all the old-fashioned makes, except the "Trentham," which is quite equal to any independent boiler. Mr. Divers is quite right in his suggestion that gardeners should not be content with what their fathers had and did providing it is possible for them to do better. A head gardener ought always to be on the look-out for improvements, no matter whether he is a young or old man. I know of an instance where some men after beating carpets left the rope hanging in the tree at night; next morning it was found that a cow had hanged itself with the rope. The men said it was not their fault, because it always had been left there! *A. E. Usher, Gardener to Sir Randolf J. Baker, Bart., Ranston Gardens, Blandford, Dorset.*

Rhododendron mundulum.—I shall be glad if any reader of the *Gardeners' Chronicle* can give me any information about Rhododendron mundulum, which appears to be allied to R. Nobleanum, and is one of the earliest bloomers among the hardy Rhododendrons, with the exception of R. præcox and R. dahuricum. My attention was first drawn to this by Mrs. Myers, of Dunningwell, Millom, Carnforth, who, in telling me of her early flowers mentioned Rhododendron mundulum as blooming early in all mild winters. As an admirer of early flowers I was anxious to procure this myself, and I could not discover the name anywhere, until Mrs. Myers kindly sent me the name of a North of England nurseryman who catalogues it. It is a good hybrid, to all appearance, with large flowers which open slightly tinted with blush but become pure white. The foliage would indicate that it comes from a parentage resembling that of Nobleanum. It appears to be a free bloomer, and is perfectly hardy with me. We are later here than in the Carnforth district, which, as many know, has a greater rainfall, and is closer to the sea. *S. Arnott, Sunnymead, Dumfries.*

Natural Selection.—Referring to the Rev. Prof. Henslow's reply to my criticisms (see p. 220) I should like to be permitted to point out that I have not challenged the position he takes up, but merely the definite statements upon which he bases it, utilizing the very tangible evidence which my Fern experiences afford. He meets this mainly by reiterating the assertions which I challenge in other words, thus; "But as a *matter of fact* (the italics are mine) adaptive variations (i.e., favourable ones) arise without the presence of any inadaptive (i.e., unfavourable ones) at all." Repetition is no argument in itself, and it is obvious that if my statement, based on actual demonstrable evidence, be true, plants vary in both ways. He goes on to say: "Let a Polypody produce as many spores as you like, Mr. Druery cultivates them; there is therefore nothing 'injurious' or inadaptive in their nature." This again is no argument against my assertion that when spores of variable species, i.e., such spores as these, are sown, they are apt to vary secondarily both advantageously and disadvantageously, since when dwarfed variations arise among robuster ones, i.e., "inadaptive" and "adapted" variations, the former varieties will perish unless removed. In connection with this Prof. Henslow asserts that "if these weak seedlings were removed they would grow all right," which, apart from the fact that I did not speak of "weak" seedlings at all, is absolutely wrong if he means that dwarf varieties would assume full size growth by such removal; it would be just as logical to assert that if General Tom Thumb had been well fed he would have grown to full size; such varieties are dwarf by constitution and not by environment merely, and if under natural conditions they originated among robust plants, it is practically certain they would speedily perish. If such a variation as described is not injurious, inadaptive or unfavourable, I should like to know what is. Furthermore in this connection Prof. Henslow states that "what Mr. Druery describes as 'variations' are nothing more than 'individual differences' due to semi-starvation." This again finds a contradiction in the facts, as dwarfed and depauperate, i.e., varietal forms of diminished foliage area, are indubitably not due to starvation at all and retain their peculiarities under the most favourable conditions of culture. As regards Ferns differing from other plants in their capacity for showing specific characters in the infant stage, I doubt this very much, and may instance the fact that at the Scientific Committee recently pans of young seedlings were exhibited to illustrate the Mendelian theory, and the varietal characters were clearly distinguishable in the infant stage. Prof. Henslow refers to a struggle for existence between grass and Ranunculus repens, and apparently imputes to me the idea that the smothering of the grass implies injurious structures therein. This however is entirely outside the question, which is one of "injurious" variations of a single species and not of advantageous or disadvantageous differences between different genera, another matter entirely. Finally, he challenges me in a footnote to name any species which has been ousted by its offspring (varietal, I assume), and for this I refer him to the *Gardeners' Chronicle* of February 9, 1884, describing a variety of Asplenium adiantum nigrum found by the writer (Asp. ad. n. caudifolium) which had evidently ousted the normal form over a large area of stone dyke on Dartmoor, a fact I have since considered to be due to its fronds being somewhat short and very numerous and closely adpressed to the wall, so that practically no spores could germinate and mature within the area it covered, while the normal form would naturally be severely handicapped as these adpressed fronds invaded its crowns. In any case, theory or no theory, the normal form, plentiful enough at both ends of the dyke, was not represented by a single plant among the hundreds of the variety. I had this case in my mind when I wrote. Finally, I opine that attacks upon Darwin's theories are little likely to be effective when based upon merely dogmatic assertions such as those in question, the premises of which are controverted by such facts as I have endeavoured to make plain. Darwin's own work is entirely free from this kind of thing. I avail myself of this opportunity to correct a misprint in my previous note, 28th line from the end, where "protects it from the insects" should read "protects it from the outset," insects not affecting the point in question. *Chas. T. Druery, V.M.H., F.L.S.*

SOCIETIES.

ROYAL HORTICULTURAL.

April 17.—The display of plants and flowers at the meeting held on this date was a brilliant and typical spring flower show. There were Anemones, Daffodils, Rhododendrons, Primroses, Polyanthuses, and other early flowering subjects from the open in plenty, and the meeting being also the occasion of the National Auricula and Primula Society's annual exhibition, it was supplemented by the varied and numerous exhibits staged under this latter society's auspices. But in addition to garden flowers, there were great banks of Orchids, clumps of forced flowering plants, some wonderful Hippeastrums, notably one large exhibit from Mrs. Burns, the flowers of which were all of white forms; a beautiful group of Souvenir de la Malmaison Carnations from the gardens of Mr. Leopold de Rothschild; and last, but not least, a faithful representation of a large rock garden by Messrs. W. Cutbush & Son. This last-named exhibit was of Gargantuan proportions, and was probably the largest exhibit of the kind attempted. It received a Gold Medal. Major Holford's beautiful display of Hippeastrums also received this high award, and, in addition to the usual grants of medals, each of the respective Committees gave awards to novelties, the Orchid Committee granting five First-class Certificates, two Awards of Merit, and one Botanical Certificate; the Floral Committee four Awards of Merit; the Narcissus Committee three Awards of Merit; and the Fruit and Vegetable Committee, Awards of Merit to two new Broccolis after trial at Wisley. This formed practically the whole business transacted by this last-named Committee. The resources of the building were greatly taxed to accommodate the various displays, both the annexes being brought into requisition for staging groups.

In the afternoon 44 new Fellows were added to the roll of the society, and a lecture was delivered by Mr. F. Enock, F.L.S., on "Colour Photography in Horticulture," the remarks being illustrated by a series of beautiful lantern slides.

Floral Committee.

Present: Wm. Marshall, Esq. (in the chair), and Messrs. Chas. T. Druery, John Green, Geo. Nicholson, T. W. Turner, C. J. Salter, J. F. McLeod, C. R. Fielder, John Jennings, R. C. Rymald Nevill, Chas. Jefferies, W. Bain, Chas. E. Pearson, Ed. Mawley, Herbert J. Cutbush, Chas. Dixon, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, Geo. Paul, Wm. Cuthbertson, and F. Page Roberts.

Major G. L. Holford, C.I.E., C.V.O., Tetbury (gr. Mr. Alexander), staged a grand batch of Hippeastrums (Amaryllis). The plants were nicely arranged among a setting of Ferns and Asparagus Sprengeri, some of the latter being allowed to trail along the front. We have no space to name each variety, and although it is hard to discriminate among a collection of such merit, we may select as the choicer King Arthur, a rich scarlet variety with a darker throat, very handsome; The Doge, a magnificent crimson flower; Viking, of the tessellated type, with red striping and splashing on a white ground; Chimborazo, a strong growing variety with rich scarlet, almost crimson flowers; Norah, a striped variety, strong in habit, and carrying four fine flowers; Laus Veneris, rich scarlet colour; and Cæsar, a dark red flower, the shade of colouring appearing unique compared with the remaining varieties. A feature of the plants was their remarkable vigour. (Gold Medal.)

Not less meritorious, and certainly more remarkable, were the plants of Hippeastrums staged by Mr. C. R. Fielder (gr. to Mrs. W. H. Burns, North Mymms Park, Hatfield, Herts). The group consisted entirely of white seedlings, of which there were about 50 plants Perhaps equally remarkable as the strain was the small period that had elapsed between the times of sowing the seed and flowering, for this was but one year and nine months. An older plant, and one that had flowered before, was shown to demonstrate the fact of the strain having become fixed. (Silver Gilt Flora Medal.)

Messrs. R. & G. Cuthbert, Southgate, Middlesex, exhibited a brilliant collection of forced flowering plants and shrubs. A number of ornamental Maples interspersed among the group furnished suitable greenery. The usual subjects were included—Staphylea colchica, Viburnum plicatum, Weigelas, including the beautiful variety Eva Rathke, Cytisus præcox Lilacs, Azaleas, etc. The Azaleas furnished a display in themselves, so well were they shown, two prominent plants being a couple of specimens of A. J. C. van Thol, the flowers of which are of a peculiar shade of red. (Silver Gilt Flora Medal.)

A group that attracted much attention was the one staged by Messrs. Cutbush & Son, Highgate, London, N. It represented a portion of a rock garden, and so admirable was the conception and design that one could easily imagine the exhibit to be a portion of an established rockery. The design was that of a prominent central portion with two bays, one at either end, the one representing a bog and water garden, the other a nook for Ferns and shade-loving plants. The bog and water garden was a skilful piece of work, and the juxtaposition of the plants perfect. The exhibit towered high, and was "topped" with taller growing shrubs, Bamboos, Roses, etc., and two huge plants of Magnolia Soulangeana were worked in at points of vantage. These were plants 15 or more feet in height, but appeared in due proportion to the exhibit, which furnishes a criterion of the magnitude of the display. We have no space to mention all the hundreds of flowers included in the exhibit, but we may single out and beautiful batch of Cypripediums spectabile and pubescens, Gunnera scabra nicely in flower, the wealth of Azaleas and Rhododendrons, and the clumps of Sarracenias and Darlingtonias. Messrs. Cutbush exhibited in another part of the Hall two baskets of the beautiful Rose Mrs. F. W. Flight, the plants being clothed with their heavy trusses of flowers to the ground level. (Gold Medal.)

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, again displayed a batch of the pretty Polyantha Rose Mad. Levavasseur. In addition to the Roses were plants of many of the best varieties of Zonal Pelargoniums, a batch of Hydrangea Thos. Hogg, and a stand of Pansy flowers. Ferns interspersed among the group and a back ground of Astilbe (Spiræa) japonica finished the display. (Silver Flora Medal.)

Messrs. Richard Smith & Co., Nurserymen, Worcester, staged a miscellaneous collection of greenhouse plants in flower, prominent among which was a number of Clematis plants, for which this firm is reputed. Other subjects included were Magnolias, Genistas, Daphne, a batch of Phyllocactus, and several well-grown plants of Phlebodium Smithianum. (Bronze Flora Medal.)

Messrs. H. Cannell & Sons, Swanley, Kent, had Zonal Pelargoniums similar to those displayed by them at previous meetings this season. (Silver Banksian Medal.)

Messrs. Paul & Son, Cheshunt, N., showed several interesting plants. They had a plant of the true Deutzia scabra, with neat little trusses of white, star-shaped flowers, each with a pleasing yellow eye glistening with nectar. The filaments of the stamens are flattened, forming a ring round the gynoecium. Bryanthus erecta was also shown, a remarkable bigeneric hybrid. Rhododendrons, several forms of ornamental Almond, coloured foliage plants, Peaches, and a fruiting plant of Eriobotrya japonica, for which a Cultural Commendation was awarded, all found a place in the group.

Mr. S. Mortimer, Rowledge, Farnham, Surrey, in addition to a charming display of Carnations, staged some coloured Primroses and Polyanthus, and spikes of the new white Stock "All the Year Round." (Silver Flora Medal.)

From the gardens of Mr. Leopold de Rothschild, Gunnersbury House, Acton (gr. Mr. Jennings), came a beautiful display of Souvenir de la Malmaison Carnations of the variety Princess of Wales. The plants were splendid specimens, with flowers 6 inches across, and strong, robust growths, the numerous buds seen indicating a wealth of flowers to follow. (Silver Gilt Banksian Medal.)

Messrs. Dobbie & Co., Rothesay, N.B., showed stands of Pansies and Violas, and several vases of Giant French Anemones. Among the Violas was a new variety named Mary Burnie. This has very large flowers of a primrose yellow colour, just tipped with a narrow band of violet. Other good varieties are Dr. McFarlane, Effie, Wm. Lockwood, and Maggie Currie. Of the Pansies we may select Niel McKay, Geo. Bulloch, Miss Niel, and James Johnstone. (Silver Flora Medal.)

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, London, N., staged a batch of very fine Carnations. Adjoining was a mixed group of flowering plants—Polygala dalmaisiana, Erica candidissima, Dimorphotheca Ecklonis, Roses, &c.

Mr. L. R. Russell, Richmond Nurseries, Richmond, displayed a group of small Clematis plants in flower similar to those exhibited by him at the last meeting. (Silver Flora Medal.)

Mr. W. Wallace, Eaton Bray, showed a new H. T. Rose named Edith D'Ombrain. The colour of the flowers is creamy white, and the growth is vigorous.

Sir F. T. Tress Barry, Bart., St. Leonard's Hill, Windsor, Berks (gr. Mr. Robert Brown), displayed a large number of vases containing Camellias from the open. The selection of varieties was comprehensive, all the best kinds of this old favourite flower being represented, the quality of the blooms being an index of the mildness of the late winter.

Sir Edmund Loder, Bart., Leonardslee, Sussex (gr. Mr. W. A. Cook), showed a wealth of flowers from the open garden. At the background was a nice display of Daffodils, while numerous other subjects such as Ericas, Primulas, Camellias, Magnolias, Rhododendrons, etc., occupied much table room. The Rhododendrons were very good examples, especially a "head" of R. Aucklandi.

F. D. Godman, Esq., South Lodge, Horsham (gr. Mr. Moody), exhibited some fine inflorescences of Himalayan Rhododendrons. Especially good were the examples of R. argenteum "grande," R. Aucklandi hybrida (rose colour), and the Luscombe's hybrid (the result of R. Luscombei × Thomsoni).

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, exhibited a batch of the floriferous Xanthoceras sorbifolia, blue and rose-coloured Hydrangeas, and a number of well-grown plants of Streptosolen Jamesoni. (Silver Banksian Medal.)

Messrs. Wm. Bull & Sons, King's Road, Chelsea, staged a number of interesting foliage plants, principally stove plants. We noticed a variegated form of Asparagus Sprengeri. The delicate new leaves of Davidsonia pruriens were remarkably handsome, and the manner of their unfolding graceful. Tillandsia Zahnii was shown in flower.

Messrs. Gilbert & Son, Dyke, Bourne, Lincolnshire, had a mixed group of spring flowers—Anemones, Daffodils, Tulips, and several varieties of Fritillaria imperialis. The beautiful double scarlet Anemone King of the Scarlets was shown in fine form. Another good variety is Queen of the Roses. This is also a double flower, but it is of a lighter colour.

Mr. N. Lowis, The Perennial Nurseries, Leversdown, Bridgwater, showed a batch of Anemones in almost every conceivable colour, tastefully arranged in metal epergnes and Bamboo stands. (Silver Banksian Medal.)

Messrs. R. Wallace & Co., Colchester, set up a stand of Alpine flowers, among which were many rarities and novelties. Caltha polypetala (see Awards) was prominent. Tulipa sylvestris major has pleasing, pointed flowers of a shade of yellow colour. The beautiful Gentiana verna was in fine form. Fritillaria obliqua has dark, almost black flowers and curiously twisted leaves.

A pan of the pretty Schizocodon soldanelloides, beautifully flowering, was shown by Messrs. T. S. Ware, Ltd., Ware's Nursery, Feltham.

Mr. C. Reuthe, Hardy Plant Nursery, Keston, Kent, in addition to a goodly display of Daffodils, had many rare and choice Alpine plants and several inflorescences of Rhododendrons. R. campylocarpum is almost unique in colour, the small heads of yellow "bells" are pleasing. Erythroniums, Fritillarias, hardy Orchids, Saxifragas, and similar plants completed the display. A pan of the double-flowered Caltha palustris was flowering nicely in this group.

Messrs. John Peed & Son, West Norwood, London, S.E., exhibited Alpine and rock garden plants, also a number of vases of Daffodils.

The Misses Hopkins, Mere, Knutsford, Cheshire, staged a small group of Alpines. (Bronze Flora Medal.)

Mr. H. C. Pulham, Elsenham, Essex, also displayed a small collection of these seasonable flowers.

Mr. Amos Perry, Winchmore Hill and Enfield Chase, Middlesex, had some neat little plants of Phlox canadensis, "Perry's variety," also vases of Erythronium.

Mr. A. R. Upton, Guildford Hardy Plant Nursery, Millmead, Guildford, had many pans of Alpine plants—Irises, Primulas, Phlox canadensis, Viola Mumybana, with flowers like a giant Violet, Andosace coronopifolia, Ribes alpinum pumilum aureum, a pleasing little shrub for the rock garden, etc.

Messrs. J. Cheal & Sons, Crawley, staged boxes of Alpine plants set off by small Conifers at the background.

The Hon. Justice Swinfen Eady, Oatlands Lodge, Weybridge (gr. Mr. Jas. Lock) displayed several plants of Clarkia pulchella, var. "Carnation flaked pink." The strain is a desirable one, the flowers being large and of the colour indicated by the varietal name, the flakings being found on the edges of the petals.

Mr. Chas. Turner, Royal Nurseries, Slough, staged a well-grown specimen of Ochna multiflora, whose curious red fruits form a brilliant and attractive feature, and are superficially not unlike the seed capsules of Euonymus europœus. Sprays of Ceonothus rigidus crowned with flowers were also staged by Mr. Turner.

Awards of Merit.

Saxifraga oppositifolia var. coccinea. A variety having flowers of a richer shade of purple than the type. Shown in a small pan by Messrs. J. Backhouse & Son, York.

Rhododendron "Gills' Triumph."—A variety of exceptional beauty, the colour being of bright rose red. The inflorescence are of a medium size, and the bells have much the form of R. × Kewense. The parents are Aucklandi × Thomsoni. Raised by Mr. Gill, Tremough Gardens, Cornwall.

Caltha polypetala.—A plant that may be likened to a glorified Marsh Marigold; indeed, we should not be surprised if it proves to be a geographical form of the common C. palustris. The flowers, however, are much superior in size and richness of colouring to those of our native plant, and the plant is more robust in all its parts. The leaves are cordate, and over a foot in diameter. The strong flowers stalks develop an umbel of five or more flowers each on pedicels 6 inches or more long. It should prove an acquisition for the bog and water garden. Shown by Messrs. R. Wallace & Co. and Sir Edmund Loder.

Mertensia primuloides.—A pretty little Alpine plant native of the Western Himalayas. The habit is dwarf with flower stalks 6 inches or more in height, bearing a cyme of small Primula-like flowers of a deep shade of violet colour. The plant is scabrous on all its parts. The leaves are petiolate and spatulate in shape. Shown by Messrs. W. Cutbush & Sons.

Narcissus Committee.

Present: H. B. May, Esq. (chairman), and Messrs. W. Poupart, Walter T. Ware, W. A. Milner, Chas. J. Digby, R. W. Wallace, Miss E. Willmott, W. W. Foster, Rev. S. E. Bourne, E. A. Bowles, P. D. Williams, R. Sydenham, A. Kingsmill, J. T. Bennett Poe, W. F. M. Copeland, J. Pope, Alex. M. Wilson, P. R. Barr, Fanny W. Currey, J. D. Pearson, Jan de Graaff, G. Reuthe, G. W. Leak, and C. H. Curtis (hon. sec.).

The displays were exceptionally good, and the exhibitors included all the more prominent growers and specialists of the genus Narcissus.

The collection obtaining the premier prize of a Silver Cup offered by Messrs. Barr and Son, Covent Garden, was staged by Mr. G. P. Haydon, Canterbury, whose group was crowded with good things, and contained not a few novelties. One rich yellow, self-coloured Ajax named Rejected Addresses is of striking appearance. Weardale Perfection, Mrs. Morland Crosfield, Mrs. J. B. M. Camm, King Alfred, and others were very noticeable. Gloria Mundi was exceptionally well coloured, the crown being of a brilliant hue. Pearl of Kent (see Awards) we regard as the finest named-novelty present. A notable feature was the massive character of the foliage, and had the flowers been cut with longer stems and some attempt at artistic arrangement made, the group would have excited still further admiration.

The second prize was awarded to Miss Katherine A. Spurrell, Hanworth, Norwich, whose examples of Mdme. de Graaff, Maggie May, Snowdrop, Lucifer, and Fireball were all notable and good.

Mr. W. R. Darlington, Potter's Bar (gr. Mr. D. Bignall), also contributed a choice assortment, and among the many good things displayed, Peach, Golden Bell (a big yellow Ajax), and Glory of Leiden, especially appealed to us.

The exhibit from the Rev. G. H. Engleheart, Dinton, Salisbury, was almost wholly composed of seedlings of the poeticus and the Engleheart types, the former predominating, and many surpassed even such fine things as Homer.

Messrs. Barr & Sons, Covent Garden, W.C., staged a table of the choicest kinds. We noticed Cassandra—a fine poeticus; Mrs. G. H. Barr, White Ajax, the renowned Peter Barr, Monarch, King Alfred, &c. (Silver Flora Medal.)

Mr. Alex. M. Wilson, Spilsby, Lincs., was awarded a Silver Flora Medal for a beautiful collection of Daffodils. We select Homespun, of lemon yellow tint and having perfectly rounded perianth segments; Concord, of similar shape, but deeper in colour and with a rich red crown; C. J. Backhouse, by no means a novelty, but superbly coloured; Bullfinch, Grandis, and the elegant and graceful semi-double Argent—a valuable flower for vases. (Silver Flora Medal.)

Miss F. W. Currey, Lismore, Ireland, brought a very beautiful collection, all in excellent condition: Queen Sophia, with prettily tinted crown, the handsome double-flowered Primrose Phœnix, Big Ben, Beacon, and others. The pretty drooping flowers of Triandrus calathinus appeared very modest amid the rich array of the other flowers, but it is a flower always to be admired. (Silver Flora Medal.)

The extensive collection from Messrs. R. H. Bath, Ltd., Wisbech, contained many good things, and such gems as Maggie May, Lady Margaret Boscawen, Lobster, and Glory of Noordwijk (an enormously big bi-colur, whose perianth segments are decidedly weak and washy in tone), King's Norton (a superb yellow self), White Queen (very fine), Weardale Perfection, Eyebright, &c. (Silver Flora Medal.)

Messrs. Pope & Son, King's Norton, Birmingham, contributed a choice assortment. Will Scarlett, with crown similar in colour and size to the form of Iceland Poppy known as "Miniata"; Mrs. Butteridge—a white Ajax; Daystar; Orangeman, with fine rich cup; Almira, &c. (Silver Banksian Medal.)

Mr. Robert Sydenham, Birmingham, had a small set of good kinds which included Waveren's Giant, Bullfinch, and others.

Many good kinds were also shown by Mr. G. Reuthe, Keston, Kent, while Sir Edmund Loder, Horsham, had about 70 different sorts of these popular flowers.

Messrs. Hogg & Robertson, Dublin, also contributed freely, and, despite the journey, the flowers appeared in excellent condition. Lady Arnott, possessing a fine red cup; Mrs. H. D. Betteridge, Mrs. Hamilton, Gloria Mundi, Sea Gull, and the fine Ajax Duke of Bedford were all noticeable. (Silver Banksian Medal.)

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, staged a representative gathering in good form.

Of more than ordinary merit was a choice lot from Sir Josslyn Gore-Booth, Bart., Sligo, Ireland. This group was rather strong in the poet's kinds, Homer, Almira, and others being well represented. Incognita, an Engleheart, White Lady, Peach, with pretty crown, Mdme. de Graaff, Nelsoni, Mrs. Backhouse, &c. (Silver Banksian Medal.)

Messrs. J. R. Pearson & Sons, Lowdham, had a very beautiful set of the flowers including such grand things as King's Norton, Waveren's Giant, Sir F. Drake, Homespun, Heroine, &c. The gem of the group was a unique solitary white-flowered seedling with perfectly rounded perianth segments and having a nearly flat, lightly-goffered crown faintly touched with lemon or palest orange colour. (Silver Flora Medal.)

Awards of Merit.

Narcissus Pearl of Kent.—This remarkable flower may best be styled a giant cernuus, with the purity of Peter Barr and the lovely form of Madame de Graaff. Further, this striking variety possesses a vigour and a stature surpassing either Empress or Emperor. The parents are said to be Madame de Graaff and Monarch, and among white Ajax kinds this novelty may be regarded as unique. From Mr. G. P. Haydon, Canterbury.

N. Warleyensis.—A self yellow kind of giant proportions, and a fine companion to King's Norton and others of that type. A flower of great substance and of excellent form. From Miss Willmott, Great Warley.

N. odorus rugulosus maximus.—This flower is large and symmetrical, with all the colour and fragrance of N. odorus, but as at present seen, with not more than one flower in a scape. The rich intense colour and the perfect form render it a most welcome addition. The name is too long, being almost a description. From Messrs. Barr & Sons, Covent Garden.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair), and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, H. Little, W. Boxall, Francis Wellesley, Elijah Ashworth, F. Sander, Arthur Dye, W. Thompson, H. T. Pitt, J. Charlesworth, G. F. Moore, J. Wilson Potter, W. H. White, W. H. Young, H. G. Alexander, H. A. Tracy, W. A. Bilney, R. Brooman-White, and Norman C. Cookson.

There was an interesting display of Orchids in which Odontoglossums, which formed the subjects of the Diploma Awards, predominated. A fine group, in which the forms of Odontoglossum crispum were well represented, was staged by H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), and secured a Silver-Gilt Flora Medal. The centre of attraction in the group was Odontoglossum crispum F. K. Sander, a marvellous variety with very large and finely-formed flowers. Fully two-thirds of the inner area of the sepals and petals was of a bright reddish claret colour, the margin and outer third of the segments being white, tinged with purple colour, the reverse of the flower almost as showily coloured as the face. The lip was white with a yellow crest and red-brown blotches. Next in importance was O. crispum Britain's King, heavily blotched and marked with purple colour; and other fine forms were O. crispum Stanley J. Pitt, O. crispum King Richard, O. crispum Ladybird, and O. crispum Maud Rochford. Forms of O. Adrianæ and others were included, also Houlletia odoratissima, Lycaste Lawrenceana, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, secured a Silver-Gilt Flora Medal for a fine group which included some good new hybrid Odontoglossums, two of which were awarded First-Class Certificates (see Awards). Cattleya Trianæ, Uplands variety, fine in colour, was well shown; several Brassavola Digbyana crosses, including the fine white Brasso-Cattleya Queen Alexandra, Lælio-Cattleya Mercia, L.-C. Myra, good L.-C. callistoglossa, the pretty new Odontioda Heatonensis, &c.

Messrs. Sander & Sons, St. Albans, were awarded a Silver Flora Medal for a nice group in which were some fine hybrids and an interesting selection of species which included the pretty Aerides Micholitzii, a selection of twenty good Lycaste Skinneri, the pretty L. Lawrenceana, Galeandra Baueri, a singular unknown Catasetum with greenish-white flowers, Polystachya bracteosa, Maxillaria Sanderiana, Dendrobium capillipes, Epidendrum Wallisii, the delicately-tinted Lælia purpurata Schroderiana in two varieties, &c. The hybrids included a very dark form of Cypripedium Tautzianum, good Lælio-Cattleya bletchleyensis, and other varieties; also two spotted forms of Odontoglossum crispum, and the singular Oncidium illustre, a supposed natural hybrid between O. maculàtum and O. leucochilum. The sepals and petals were yellowish, barred with purple-brown colour, and the lip white and much larger than others of the section.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), secured a Silver Flora Medal for a fine group, rich in Odontoglossums, and especially in good forms of O. crispum, of which there were several blotched varieties, the best being O. crispum Warnhamense, a very pretty and finely-formed flower, evenly spotted with dark purple. Among the Odontoglossums was a pretty rose-tinted variety of O. ramosissimum, &c. All were remarkably well grown.

Messrs. Hugh Low & Co., Enfield, obtained a Silver Flora Medal for a group, in the centre of which was a grand specimen of the old Dendrobium Pierardi. With it were several good D. Boxalli, a splendidly coloured D. crassinode and other Dendrobiums; two nicely spotted Odontoglossum crispum, Cymbidium devonianum, Cattleya Schroderæ varieties, C. intermedia alba, &c.

Messrs. Jas. Cypher & Sons, Cheltenham, sent Cattleya Mendeli Duchess of York, a clear white variety, with yellow disc and slight rose-coloured tint on the lip; three very fine varieties of Miltonia vexillaria, the one with very large magenta rose-coloured flowers; M. v. virginalis with rose-coloured sepals, and petals margined with white, the large blade of the lip also white; and another with very large rosy lilac-coloured flowers.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. H. Ballantine), showed the handsome purple-spotted Odontoglossum Pescatorei Veitchianum, O. P. Schröderianum, and the distinct O. P. melanocentrum, white with a dark reddish-purple base to the lip; O. Adrianæ aureum, Cattleya Memoria Dallemagnæ, var. Alexandra, and Epidendrum Cleon.

M. Chas, Vuylsteke, Loochristy, Ghent, showed a selection of good hybrid Odontoglossums, including O. amabile, O. percultum, O. Lawrenceanum, O. excellens, and O. ardentissimum, and the showy O. crispum spectatum, resembling a good O. ardentissimum, but with the lip of the form of O. crispum.

F. J. O. Montagu, Esq., Melton Park, Doncaster, sent Cattleya Schröderæ, F. J. O. Montagu with white sepals and petals and finely crimped lip with brownish orange disc and rose-pink coloured front.

Norman C. Cookson, Esq,, Oakwood, Wylam (gr. Mr. H. J. Chapman), showed the finely blotched Odontoglossum crispum Rossendale, and a remarkable specimen of the rich, purple-spotted O. crispum Frederick, with a spike of 17 fine flowers, and an old spike with a large seed ovary; splendid examples of good culture.

Mr. H. Whateley, Kenilworth, sent several good spotted Odontoglossums, the best, O. crispum Whateleyæ, securing an Award of Merit.

Francis Wellesley, Esq. (gr. Mr. Hopkins), showed Cypripedium bellatulum citrinum, pale yellow heavily blotched with claret-purple.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound), showed Odontoglossum triumphans latisepalum and aureum.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed a selection of very fine Odontoglossums, the large-flowered typical white or blush-tinted O. c. Venus, and O. c. Lady Buchan, which secured the First and Second Diplomas in their class, being superb. With them were the unapproachable O. triumphans Lionel Crawshay, which has never yet had a trial; and the prettily marked O. Andersonianum Raymond Crawshay.

AWARDS.

First-Class Certificates.

Brasso-Cattleya Mrs. Francis Wellesley (C. Luddemanniana × B. Digbyana), from Francis Wellesley, Esq. (gr. Mr. Hopkins). A very remarkable and beautiful variety, and the largest of the class, its petals extending over 11 inches, and the sepals, from tip to tip, one foot. The sepals and fringed petals are silver-white, with a delicate lilac-rose tint, the veining being very light purplish rose. The midrib of each segment is white at the base. The lip, which is over 4 inches across, is finely fringed; the disc, primrose yellow, the front soft rose coloured. The colours are exquisitely displayed and of very delicate tinting.

Lælio-Brasso-Cattleya × Veitchii (Lælia purpurata alba × Brasso-Cattleya Digbyano-Mossiæ), from Messrs James Veitch & Sons, Chelsea. A grand hybrid, pointedly showing the advantages of second crossing. The flower is large, and bearing some resemblance to the best forms of Lælio-Cattleya callistoglossa, but perfect in form, and with an openly-displayed fringed lip. Sepals and petals silver-white tinged with rose; lip white at the base with a yellow disc and ruby-crimson front, getting lighter towards the finely fringed margin.

Lælio-Cattleya callistoglossa, "The Dell variety," from Baron Sir H. Schröder (gr. Mr. Ballantine). A finely formed and showy flower, with lilac-tinted sepals and petals and very fine labellum, the front of which is dark ruby-crimson.

Odontoglossum amabile "John Bradshaw" (crispum Calypso × Harryano-crispum), from Messrs. Charlesworth & Co. A very beautiful, distinct and finely coloured hybrid, with the inner two-thirds of the sepals and petals barred with claret-purple, the outer parts being white tinged with purple. Lip, pure white in front, marked with purple at the base.

Odontoglossum W. H. Hatcher (crispo-Harryanum × Pescatorei Charlesworthii), from Messrs. Charlesworth & Co. A charming hybrid of perfect shape, with white sepals and petals tinged with rose, and heavily blotched and banded with dark purple. Front of lip white.

Awards of Merit.

Lælio-Cattleya Baroness Schroder, var. delicata (L. Jongheana × C. Trianæ) from Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander). A really fine flower, formed much like Lælia Jongheana, but broader in all its parts and as large as C. Trianæ. Sepals and petals light rose, lip orange colour with a rose margin, which is finely crimped.

Odontoglossum crispum Whateleyæ, from Mr. H. Whateley, Kenilworth. A pretty and well-formed flower, with some indication of O. Adrianæ; white, evenly and profusely spotted with dark purple.

Botanical Certificate.

Dendrobium shillongense (verified at Kew), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). The plant was shown at the last meeting, and, as it resembled D. lasioglossum, was referred for verification. Flowers, an inch across, white, with a downy crest to the labellum, which was streaked with purple on the side lobes.

Cultural Commendation.

To Mr. H. G. Alexander (Orchid grower to Major G. L. Holford) for a fine plant of Miltonia vexillaria superba of a beautiful magenta rose tint, and with eight spikes bearing between them over 50 flowers.

Diploma Awards.

Odontoglossum crispum (typical unspotted). *First Diploma.*—Odontoglossum crispum Venus. *Second Diploma.*—O. crispum Lady Buchan; both from De B. Crawshay, Esq.

Odontoglossum crispum (spotted). *First Diploma.*—O. crispum Rossendale, from Norman C. Cookson, Esq., and J. Wilson Potter, Esq. *Second Diploma.*—O. crispum Jeanette, from J. Wilson Potter, Esq.

Odontoglossum triumphans. *First Diploma.*—O. triumphans Lionel Crawshay, from De B. Crawshay, Esq.

Odontoglossum Pescatorei. *Second Diploma.*—O. Pescatorei Schröderianum, from Baron Schröder (gr. Mr. Ballantine).

Odontoglossum Hybrids. *First Diploma.*—O. Adrianæ aureum, from Baron Schröder.

Over 200 of the Society's paintings of Certificated Odontoglossums formed a very instructive exhibit.

Fruit and Vegetable Committee.

Awards of Merit.

The committee adjudicated upon five varieties of Broccoli, after trial at Wisley, and granted an award of merit to the varieties Richmond Late White and Sutton's Late Queen, sent by Messrs. Hurst & Son, Houndsditch, and by Messrs. Sutton & Sons, Reading, respectively.

Scientific Committee.

April 2.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair); Rev. W. Wilks, M.A., Messrs. Güssow, Michael, Worsdell, Bowles, Hooper, Shea, Saunders, Gordon, Hemsley, Chapman, and Chittenden (hon. sec.). Visitor: Mrs. Scott.

Photographs of movements in plants.—The chairman introduced Mrs. Dukinfield Scott, who explained the method of taking several successive photographs of plants on a large sensitive plate at frequent intervals, so that the photographs could be shown continuously on a screen by means of a cinematograph and thus illustrate the nature and extent of the movements performed by the different parts of plants.

Potato scab and "Rhizoctonia."—Mr. Gussow referred to the Potatos covered with a violet web of fungal hyphæ belonging to the fungus Rhizoctonia shown before the Scientific Committee on October 24, 1905, and reported upon at the meeting on November 7, 1905, and said that he had been conducting experiments, which showed that this fungus produces the well-known scab disease on Potatos. (See report in Journal, Royal Agricultural Society, vol. 66 (1905), pp. 173-177, with figures.) He referred to some independent investigations upon the same fungus carried out by Mr. F. M. Rolfs, M.S., of the Colorado Agricultural College, whose careful observations are published in "U.S.A. Experimental Station, Colorado," Bulls. 70 and 91. These observations seem hitherto to have escaped notice in this country. Mr. Rolfs has carried on his observations during three years, and has placed it beyond doubt that the fungus known as Rhizoctonia violacea is the cause of the Potato scab in America. He has also cleared up the mystery of the "sterile mycelial fungus," as this has been called, by finding the fruiting stage, which proves it to belong to the Hymenomycetes, and to agree with the fungus called Corticium vagum. Dr. E. A. Burt calls it var. solani of that fungus. Thus a very interesting fact has been arrived at, and, although Mr. Gussow is well aware of the numerous other fungi to which the scab disease has been attributed, he considers there is no doubt that the real cause has now been finally ascertained. It is interesting, said Mr. Gussow, to observe that Mr. Rolfs succeeded in 203 cases out of 225 in producing the disease from the basidiospores and the sclerotia of the Corticium, and he finds that dipping the seed

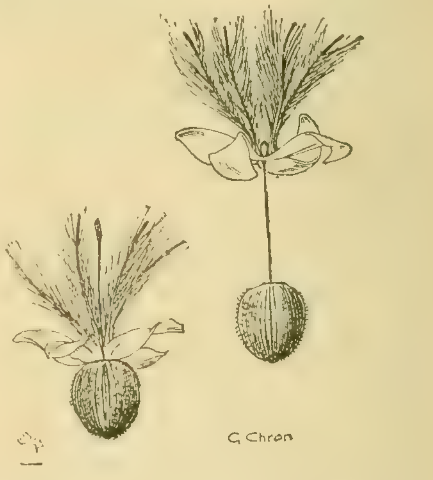


Fig. 104.—A natural parachute (seed of leucodendron argenteum).
See p. 255.

Potatos into a weak solution of corrosive sublimate (1oz. to 10 gallons of water) efficiently checks the injury, a fact of great importance.

Galls on Spruce and Yew.—Galls on Spruce and Yew were shown by Mr. HOOPER, and taken by Mr. SAUNDERS to report upon.

Fruits of Leucadendron (see fig. 104).—Dr. MASTERS showed some fruits of the Silver Tree, Leucodendron argenteum. The flowers are unisexual. The abortive stamens in the female flowers are covered with long, silky, white hairs, and are united at the base around the wiry style from which the fruit depends, the style being prevented from passing through the hole where the staminal lobes are joined by the button-like stigma. Thus the whole forms a parachute apparatus by means of which the dispersal of the fruit is assisted.

Double Spathe in Anthurium (see fig. 105).—Herr FROEBEL, of Zurich, sent a specimen of the inflorescence of Anthurium Scherzerianum, in which the spathe was doubled, the second and smaller spathe being separated from the lower by an internode of about ½in. The second spathe had not yet expanded.

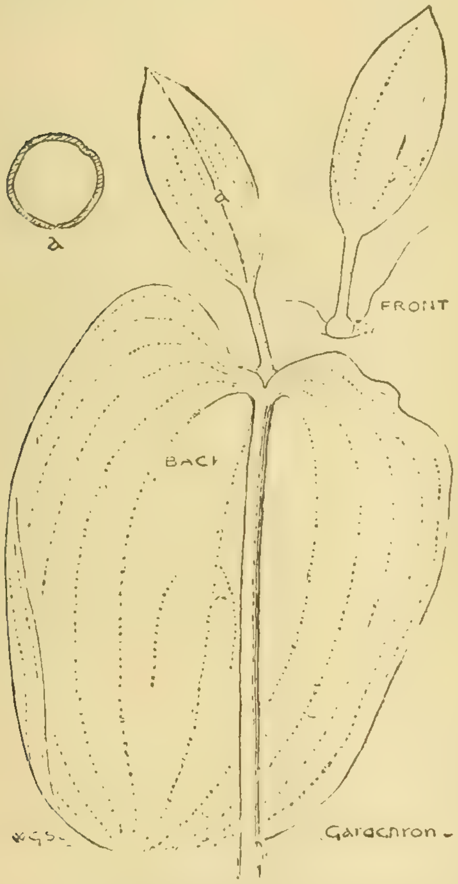


FIG. 105.—ANTHURIUM WITH TWO SPATHES, the upper one tubular as shown in section at the upper left-hand corner.

Sporting in Calceolaria.—Mr. SHEA drew attention to a curious herbaceous Calceolaria shown by Mr. RILEY, of Oakfield, Walton-on-Thames, one side of which bore yellow flowers, while the greater part, about two-thirds, bore pinkish flowers, some of which, however, had a patch of yellow upon them. The variation was very similar to that in the Cockscomb shown by Mr. SUTTON at a recent meeting, and to that of a Poppy described and figured in these columns by Prof. F. Oliver, April 5, 1902, p. 223, fig. 71.

Tropical Fruits.—Mr. WORSLEY exhibited a Pineapple from Natal which was peculiar in having the horny processes at the ends of the bracts more highly developed than usual. He suggested that it might be derived partly from Ananas macrodonta. There was a marked absence of woody fibre and a pleasant flavour.

Leaves, &c., Injured.—Mr. JENKINS sent leaves of Ivy-leaved Pelargonium upon which were brownish warts, which later dropped out, leaving a small hole. Fuchsias, Hydrangeas, and other plants were similarly affected in the house. Mr. GUSSOW took them to examine further. Numerous other specimens of diseased plants were received from different correspondents.

PLANTS EXHIBITED.

1.—Mr. WORSLEY drew attention to some plants of *Tulipa dasystemon* (Regel) shown by C. J. VAN TUBERGEN, F.R.H.S., of Haarlem, Holland. This Tulip is a native of Siberia, is dwarf in habit, and bears flowers of a yellowish colour and very sweet scented. One of the bulbs exhibited carried five flowers.

2.—*Sansevieria Laurentii* (De Wild). A species from the Congo, introduced from Stanleyville, Stanley Falls, by the late Prof. Laurent in 1904, having erect leaves about 18 in. in length margined with yellow.

3.—*Ficus* (?) *Dryepondtiana* (De Wildeman), from the same district as the last. A handsome foliage plant, with bold, dark green, bullate leaves, red beneath, and with narrow membranous stipules. To this a Botanical Certificate, as an interesting novelty, was awarded on the motion of Dr. MASTERS, seconded by Mr. GUSSOW. The last two plants were shown by the Director of the State Botanic Gardens, Brussels. The Ficus, if Ficus it be, is figured in the last number of the *Revue de l'Horticulture Belge*.

DEVON DAFFODIL AND SPRING FLOWER.

APRIL 10.—This society held a successful show in the Guildhall at Plymouth on the above date. Numbers of exhibitors from Cornwall entered in the open classes, though the unfortunate but unavoidable fixture of the show in Holy Week prevented clerical exhibitors from competing. In the classes confined to the county of Devon the entries were numerous and the competition exceedingly keen, and it is very evident that the society has attained its aim in promoting the culture of the Daffodil in the county. The entries for flowering shrubs were fewer than was the case last year, but no falling off was shown in the other classes. Spring flowers and pot plants were plentiful, and the latter of excellent quality. Nurserymen's exhibits were of a high order of merit, and added much to the beautiful floral picture provided in the great hall. The judges passed a vote of thanks to Mr. H. GRIGG for a very fine collection of flowering shrubs and spring flowers, to Col. F. HEXT for several large bunches of superb Neapolitan Violets, and to Mr. R. SYDENHAM for a stand of bulbs grown in moss fibre. For a collection of 30 varieties of Daffodils, the 1st prize was awarded to Mr. E. H. WILLIAMS for a fine stand containing, among others, Queen Caroline, Flamingo, Ben Jonson, Lady Aline, Almira, Flora Wilson, Herrick, and Mrs. C. Bowley.

For a group of Daffodil seedlings not in commerce, a Silver Cup was adjudged to Mr. J. C. WILLIAMS, who staged fifteen magnificent unnamed varieties of seedling Narcissi, among which were a fine bi-color trumpet of great substance with very pointed petals; a large white flower with prettily curved perianth and deep yellow cup edged with a broad band of orange scarlet; a very large sulphur white with wide-petalled perianth and deep yellow cup; a pale primrose with bright orange, expanded crown; a white with flat orange-scarlet crown, a "Marvel" seedling, white with green-centred scarlet cup, and twin-flowered seedlings that gave the appearance of being Minnie Hume and triandrus crosses.

For nine distinct Medio coronati, the 1st prize went to Hon. J. BOSCAWEN, who had a fine stand containing Enid, White Lady, Brigadier, Elaine, and Resolute in faultless condition.

Best group of Rhododendron trusses: 1st prize, Mrs. CORYTON, with a representative collection in which were included R. fragrantissimum, R. Dalhousiæ, and R. campylocarpum.

Finest truss of Rhododendron: 1st prize, the EARL OF MORLEY.

Six Camellias: 1st prize, Mrs. CORYTON.

Finest Camellia: 1st prize, Mrs. J. WILLIAMS.

Group of 20 hard-wooded flowering shrubs: 1st prize, the EARL OF MOUNT EDGCUMBE, with an interesting collection containing Correas, Acacias, Embothrium coccineum, and many rare shrubs. 2nd prize, Mrs. CORYTON.

There were ten entries for the premier Devon class, 15 varieties of Daffodils, for which the 1st prize was given to Mr. G. SOLTAU-SYMONS. The other classes were also well filled, especially those for the finest single blooms, each of which had ten or more entries. The 1st prize for 20 hard-wooded flowering shrubs was won by Mrs. BAINBRIDGE with a good collection. There were also classes for Primroses, Polyanthi, Auriculas, Cinerarias, Freesias, Lily of the Valley, Cyclamen, Hyacinths, Tulips, &c.

Messrs. BARR's Silver Cup for the best collection of Daffodils was won by Mrs. W. TYACKE.

Messrs. R. VEITCH & SON, Exeter were awarded a Gold Medal for an excellent stand of miscellaneous plants including Saxifraga Guildford seedling, S. oppositifolia, S. apiculata, S. Boydii, S. Grisebachii, S. retusa, Androsace arachnoides, A. sempervivoides, A. villosa, A. Chumbyi, A. Laggeri, A. pyrenaica, A. carnea, Rhodiola rubra, Draba olympica, Shortia galacifolia, Dondia epipactis, Primula nivalis, P. viscosa, P. marginata, P. denticulata, P. Lindsayana, fine Tree Carnations, Lilacs, Magnolias, Acacias, and other flowering shrubs. The DEVON ROSERY, Torquay, exhibited a large collection of pot Roses in flower (Silver Medal). Messrs. DOBBIE & SON, Rothesay, showed wonderfully fine single anemones, for which they were given a Silver Medal and an Award of Merit. They also showed Pansies. Messrs. SUTTON & SONS, Reading, staged a splendid lot of Cinerarias, for which they received an Award of Merit, and a Silver Medal. Messrs. T. CHALICE & SON, Plympton (Silver Medal), showed Brachyglottis repanda in full flower, Andromeda speciosa, Cytisus Kewensis, C. purpureus, the curiously spotted Rhododendron Princess of Wurtemburg, Pyrus Maulei, &c. Mr. VINCENT SLADE, Taunton, Silver Medal, a collection of Zonal Pelargonium trusses. Messrs. BARR & SONS, who obtained a Silver Medal, staged over 150 varieties of Daffodils, amongst which were Lady Janet Jodrell, Peter Barr, Chanticleer, Admiral Togo, Fairy Queen, King Alfred, Loveliness, Ariadne, Cleopatra, and Big Ben.

NATIONAL AURICULA AND PRIMULA.

APRIL 17.—The annual display of this society is an event looked forward to by growers with the keenest interest, and certainly at the show in the Royal Horticultural Society's Hall on Tuesday last, there were not wanting either competitors or enthusiasm.

In some of the larger classes for Auriculas—that for 24 show kinds, for example—many noted competitors were to the front, Mr. DOUGLAS, Bookham; Mr. W. B. CRANFIELD, Enfield; and Mr. J. H. WILSON, Sheffield, taking the three first places in the order given.

In the class for 12 show kinds, Mr. DOUGLAS was again first, with clean, well-grown examples, Mr. TURNER, Slough, following.

For six plants, Mr. W. SHIPMAN, Altrincham, and Miss WILLMOTT, Great Warley, secured the leading places; while Mr. J. T. BENNETT POE took the first place with four plants.

In more than one instance, Messrs. PHILLIPS and TAYLOR, Bracknell, staged a very creditable lot of plants.

Miss WILLMOTT secured first place in the class for selfs.

The class for 24 Alpines was strongly contested, Mr. DOUGLAS leading, and Mr. MARTIN SMITH taking the second place. Firefly, Rosy Morn, and Duke of York were all good in the first prize lot. Mr. DOUGLAS was also first for 12 Alpines, Mr. EASTON, Twyford, taking the lead in the following class for six plants.

In the class for fancies, Mr. DOUGLAS was again to the front, and his Daffodil, Oriental, Old Gold, and Saxon, were especially fine.

The leading prize for 12 Primulas was won by Mr. MARTIN SMITH, who had Kewensis, verticillata, frondosa, integrifolia, nivalis, and many more in capital form. The same exhibitor was first for a group of Primulas, which included species and varieties in flower.

Mr. MORTIMER was strong in Polyanthus, and Mr. J. CROOK brought from Forde Abbey, Chard, a very excellent strain of Polyanthus, which was highly recommended. This last-named exhibit was not for competition. Mr. W. A. WATTS, St. Asaph, exhibited similarly a collection of cut Polyanthus, that gave evidence of a good strain.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

April 9.—The monthly committee meeting of this society was held at the Royal Horticultural Hall, Vincent Square, Westminster, S.W., on the above date, Mr. Thomas Winter in the chair. Four new members were elected, making a total of 51 for the quarter. Seven members were reported on the sick fund at the present time. The usual quarterly grants were made to members on the benevolent fund. The annual report and balance-sheet has been posted to all the members. Any member not having received one can have a copy sent by applying to the secretary.

Obituary.

John Mahon.—One more has to be added to the list of clever young men who have gone from Kew to do empire work in Africa, and have lost their lives in so doing. That list is a long one. And still they go, cheerfully and full of hope. "Soon and sure the gap is filled. Pioneers! Pioneers!" Heroes every one of them, their foes, worse than men, savage or civilised, being black-water fever, malaria, and the dreaded sleeping sickness. No men in their several ways ever served their country better, or performed their duty with greater zeal than these did, whose end came all too soon. John Mahon went to Kew 10 years ago, a bright young Irishman, full of love for plants and with a nature as poetical, as manly and as lovable as that of the best of his countrymen. A hard worker, a close student, a follower of William Morris, and therefore full of the milk of human kindness, Mahon soon won the hearts of his associates and the notice of those in authority over him. When Sir Harry Johnston sought a good man to serve as forester in British Central Africa, Mahon was the man selected, and Sir Harry was congratulated on his good fortune to get him. The work Mahon did was mixed up with that of others, so that only few could see how well he had served. Some idea of his powers of observation can be gathered from the account of his first impressions of Tropical Africa which he communicated to the *Journal of the Kew Guild* in 1898, p. 17, a delightful sketch, for Mahon could write and talk as well as he could do things. He sent home thousands of dried specimens, seeds, tubers and plants. He came home dissatisfied with the treatment he got, for he soon drooped if not encouraged. Sir Harry Johnston, however, knew Mahon's worth, and he was engaged again for pioneer work, this time in Uganda. An account of "A Journey to Uganda" was contributed by him to the *Kew Guild Journal* for 1903, p. 145, after he had been invalided home through fever, which turned out to be the deadly sleeping sickness. The last paragraph in that account speaks of the charm, interest, and commercial promise of Uganda "and it ought to go ahead if the health of the white men engaged in the task of whipping it into shape can be assured. It is hard to convince even those who know it that such a charming country can have so much disease lurking about. He came home with the poison in his blood three years ago, and with the help of the most eminent doctors he fought a brave fight for his own life and in the cause of science. When he could do a little work, he was employed either at Kew or the Imperial Institute, the Director of which treated him with much sympathy and kindness. He died in University College Hospital, where he was under the special care of Dr. Rose Bradford, F.R.S., and was buried on April 10, in Richmond Cemetery, many of the officials of Kew and the Imperial Institute attending the funeral. He leaves a widow, but no children. Mahon was the soul of modesty and unselfishness, and yet he complained bitterly of the treatment he received as a Government official. *W.*

THE LATE JOHN MAHON.

Mrs. Honess.—Many of our readers will regret to hear of the death on Tuesday last, at Byfleet, Surrey, of Mrs. Honess, widow of Charles Honess, who died in 1900, and was previously gardener at Cobham Park, Surrey, where his son is head gardener at the present time.

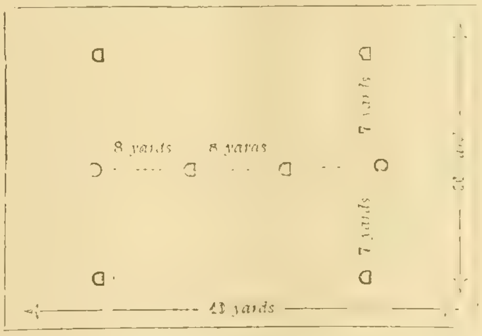
Evelyn Elizabeth Hill, only daughter of Mr. J. G. Hill (of Messrs. Bull & Sons, Chelsea), died April 14th, after an illness of ten days, at Greyside, Muswell Hill, N.

ANSWERS TO CORRESPONDENTS.

Caddis Worm: *R. B.* Kindly send us specimens.

Calville Blanc: *X.* The word is masculine, and is derived from a locality near Lyon. It should not, as is usually the case, be written blanche. See Littré.

Croquet Lawn. *Constant Reader.* For the purpose of playing the game of croquet, a well-rolled level grass-plat or lawn not less than thirty yards long by twenty yards wide is required. A full-sized croquet ground measures forty yards long by thirty yards wide. The following diagram will show what is needed:—



In the line through the centre of the ground, eight yards from the boundary at either end, put the croquet pegs, and at 16 yards from either end a hoop. Let the corner hoops be placed in a line with the pegs, and seven yards from the pegs. This and similar information is contained in the *Calendar of Garden Operations*, to be obtained from our Publishing Department, price 7½d. post free.

Cystopteris montana: *Correction.* We are sorry to find that the illustration at p. 229 shows the abnormal evergreen fronds to be more markedly pinnate and with more conspicuous venation than was actually the case.

Horticultural Trade Journal: *A. W. S.* The price is 2s. 6d. per year, but it is, we believe, supplied to the trade only. Address, Horticultural Printing Co., Burnley.

Insects: *F. M.* What you send are Millipedes, which are very destructive. Trap them with slices of Potato or Carrot, or apply a dressing of gas lime.

Ivy Bark Eaten: *G. L. N.* The bark from the Ivy shoots must have been removed by squirrels or mice. If there are any of the former in the gardens, these are the more likely culprits. We do not know of any insect which is likely to have done the mischief.

Judging at Flower Shows: *Anxious.* The fee paid for this work varies, but is always the outcome of an arrangement between the judge and the society's officials for whom he is to adjudicate. In some cases the fees include travelling expenses, but in not all, in which case of course these must be taken into consideration when the fee is agreed upon. In the case of rich societies out-of-pocket expenses are always paid in addition to the fees. By "terms" the committee mean not only out-of-pocket expenses, but some recompense for the work. You can obtain the Royal Horticultural Society's *Code of Rules for Judging* from our Publishing Department, price 1s. 7½d. post free.

Legal Questions: *J. R.* We do not know of any book which would be serviceable to you. Assuming that you are a trader and that there is nothing to the contrary in the lease, you can remove all the things you mention before the expiration of the term, but, if in doubt, you will do well to consult a solicitor.

Names of Plants: *W. O. W.* Alonsoa incisifolia.—*M A.* Scilla nutans alba.—*A. Y. L.* 1, Dendrobium chrysotoxum; 2, Triteleia uniflora.—*G. T. Y.* 1, Kerria japonica; 2, Pyrus (Cydonia) japonica; 3, Azara microphylla; 4, Skinneria japonica; 5, Cupressus Lawsoniana white var.; 6, Thuya dolabrata.—*J. U.* Anemone blanda.—*Japonica, Durham.* 1, Oncidium sphacelatum; 2, Odontoglossum triumphans; 3, Cornus Mas. Male Dogwood.—*J. R.* Crinum capense.—*Miss L.* Triteleia uniflora.—*J. McC.* Oxalis Bowiei.—*A. C., Lichfield.* What miserable specimens! You surely cannot expect us to name them correctly! 1, Lopezia coronata; 2, Mesembryanthemum; 3, a Composite species not recognised; 4, Amygdalus nana; 5 and 6, unrecognised.

Peach Tree. *S. E.* The time usually chosen for artificial pollinating in glass houses is at noon or thereabouts, the reason being that the conditions are usually drier at that time than at any other part of the day, and consequently the pollen can be more easily transferred. But it does not follow that the stigmatic surface is not receptive at other times, and we think the gardener would be doing good even if he could not perform the operation earlier than 4 o'clock. We must remember that many plants owe their pollinating to night-flying moths, and are pollinated when it is quite dark. The Peaches have probably dropped from other causes than non-fertilising. Much has been written in our pages on Peaches dropping, and it is generally considered to be due to either insufficient water at the roots at some period of the year—in most cases during the late summer and autumn; over-cropping the previous season, or unripened wood. The liquid manure prepared from the stable byre would suit the requirements of these trees, but it is not of the same consistency as that prepared from cows. As the borders have already a heavy dressing of stable manure, it will be advisable not to apply further stimulants, as there would be danger of over-feeding, which might in itself cause the Peaches to drop.

Potato: *A. A. W.* We cannot undertake to name Potato tubers.

Rhododendrons: *J. R.* It is very likely that the leaves would prove to be poisonous to sheep, it being well known that some species are of a poisonous nature, it having been recorded that goats have died after eating the leaves of R. cinnabarinum.

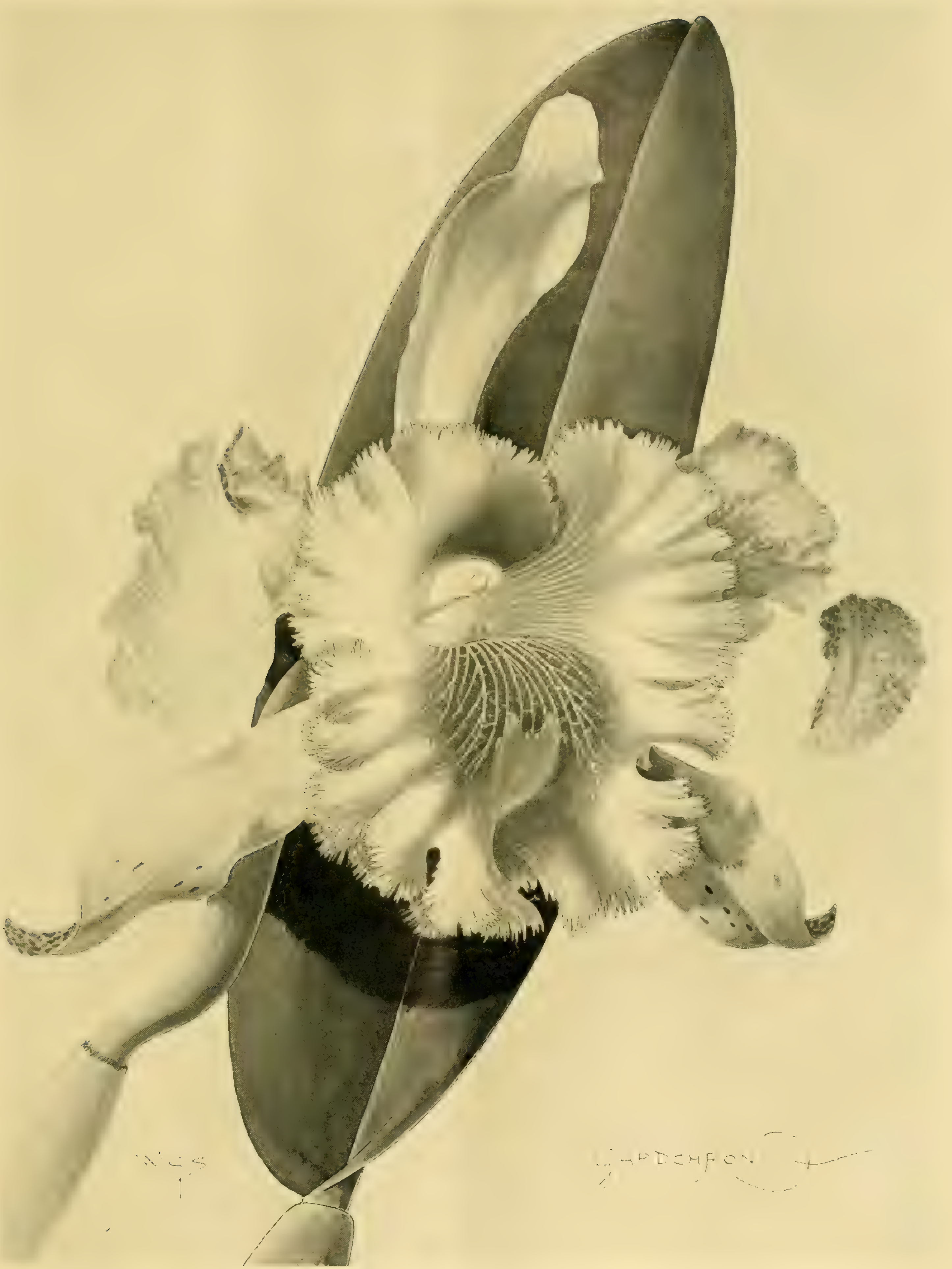
Tulips: *R. N.* The bulbs and leaves are covered with the Tulip mould Botrytis parasitica, which is causing such wholesale destruction. Burn the bulbs and plant elsewhere, or bake the soil before planting in it.

Violet Leaves: *Miss F. N.* You should be able to get leaves from the nurserymen and market growers, but in such a serious matter do not act without accurate knowledge. Insert an advertisement.

⁂ Reports of the Royal Botanic (mainly a repetition of the Show at the Royal Horticultural Society on the previous day) and of the Manchester Orchid Society are unavoidably omitted.

Communications Received.—A. H. S. (Johannesburg)—T. W.—Stanley & Co.—R. H.—A. & B.—De B. C.—R. H.—W. G. S.—A. M. V.—W. Kelly—H. A. Pettigrew (many thanks)—J. Guttridge—E. G. G.—A. S.—P. S.—H. E. M.—J. G.—C. S. B. C.—C. R.—H. W. W.—W. P.—R. P. B

For Market Reports see page xiv.



Brasso-Cattleya, "The Baron." Sepals and Petals yellowish cream coloured, freckled with rose and purple between the veins. Lip primrose yellow, marked with emerald green and shades of rose and purple. From the collection of Messrs. Sander & Sons.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,009.—SATURDAY, April 28, 1906.

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THE FLORA OF THE HOLY LAND.

THE interest shown in the plant of "Ranunculus asiaticus," which I exhibited at one of the Royal Horticultural Society meetings in April of last year, must be my excuse for sending you the following notes.

Owing to the facilities afforded by various steamship companies, for yachting cruises in the Mediterranean, the number of visitors to Palestine has enormously increased of late. On the occasion of my last visit two years ago, some 1,300 people—800 Americans and 500 English, the latter headed by the Archdeacon of London—arrived almost simultaneously.

About four weeks ago an American vessel landed 630 passengers at Jaffa; who, after spending the very few days at Jerusalem allowed by their itinerary, were hurried off to Cairo. All through the tourist season large numbers of "Greek" and "Latin" pilgrims arrive to visit the holy-places, and to one and all the apparently endless variety of flowers growing by the wayside and on the untilled land, which forms so great a proportion of Palestine, presents a spectacle which I suppose cannot be surpassed elsewhere in the world.

The month of March is perhaps the time when the greatest variety of wild-flowers can be seen—as immediately the "latter-rains" have moistened the soil and the warmth of the sun is felt, the surface of the ground becomes one lovely mosaic of charming flowers, in every shade of colour.

On all the hilly country, at least South of Banias, the Cyclamen latifolium is not only found growing freely, but in places it covers the ground, as the Dog Violet does in our English woods, and almost every rock has Cyclamen growing in some crevice or hole.

In many parts of the country the ground is blue with the lovely dwarf Iris, and side-by-side are sheets of pink Phlox. All the higher and hilly tracts abound in Asphodels and Rock Cistus, &c.

But the flowers that appeal to most visitors, especially to those who allow themselves time to go quietly through the country, riding and camping from place to place, are unquestionably the Ranunculus asiaticus and the Anemone coronaria.

Many travellers have spoken of the flaming colours of these flowers, as seen completely carpeting the plain of Sharon. But it is not merely on this plain, or indeed only on the lowlands, that the Ranunculus and Anemone flourish, but practically everywhere, from the sultry shores of the Lake of Tiberias, about 700 feet below the level of the sea, to the heights of Carmel and the hills around Nazareth.

And, so far as my experience goes, the two plants always grow side-by-side; one is never found without the other being close by.

This fact, no doubt to a great extent, accounts for the confusion between the Ranunculus and the Anemone in the minds of many travellers. As very few have ever seen a single-flowered Ranunculus in England, it is quite natural that the name "Anemone" should be given alike to both, especially as—except in a few localities—the prevailing colour of both is almost the same shade of deep red. The form of the flowers, and the size of the flowers also, is generally similar—in fact it is only on close examination that the ordinary traveller would discover that the Anemone is always wanting in the calyx, which is so distinguishing a feature of the Ranunculus.

There are, of course, other real differences. The lovely shades of colour in the Anemone, varying from a pure white to deep mauve, and found in comparatively few districts, are never seen in the Ranunculus; and on the other hand the rare tints of bronzy yellow, sometimes seen in the Ranunculus, are never displayed in the Anemone. Then again, the Anemone is always two to three weeks earlier in blooming, but as it remains in flower from the end of February till the end of March, and the Ranunculus is in full flower by the third week of March, they are constantly blooming together.

The flowers of the Ranunculus which I exhibited last April do not by any means give an adequate idea of the beauty of those seen here. Not only does the locality affect the colour of the blooms materially, but the depth of soil has a great influence on their size also.

Around our tents on the hills above Nazareth, the ground is carpeted with the Ranunculus—the Anemone here, at this date, being practically over—but they are all small, the flower barely 1½ inch in diameter, and the stalks only 6 to 8 inches high. On Mount Carmel, just across the plain of Esdraelon, around our last camping place, flowers fully 4 inches in diameter were plentiful, borne on stalks 18 to 24 inches in length. When such is the case, the boldness and perfect symmetry of the erectly-borne blooms is most striking, as may be supposed.

The eastern summit of Mount Carmel is also noted for Anemones varying from pure white to deep mauve in colour, whereas throughout the rest of the mountain it is difficult to find Anemones which have not the usual deep red colour and generally, but not always, exhibiting the characteristic band of white at the base of the petals.

A fine Tulip is also found for a short distance around the eastern summit of Carmel, flowers of which I send, with some foliage, that, however, does not clearly show the twisted character of the leaves so noticeable in growth [T. Clusiana].

If, as is often said, the Ranunculus and the Anemone are very closely allied, is it not strange that growing as they do everywhere, side-by-side, it is impossible to find any instance of a hybrid form between the two?

In the extremely interesting work brought out by MM. Lortet & Gaillard, of Lyons, entitled *La Faune Momifiée de l'Ancienne Egypte*, a categorical reply is given to the problem propounded by Jomard, at the time of Napoleon's invasion of Egypt, in his *Description de l'Egypte*, as follows :—"These various mummies and fragments of animals, will one day enable naturalists to tell what species inhabited Egypt during a very remote period. Indeed there is no other way of knowing whether the animals that now thrive in Egypt are the same as those that thrived there centuries ago, or to establish the grave question as to the invariability of essential or specific forms throughout the ages." Messieurs Lortet & Gaillard show clearly that the species embalmed 20, 30 or even 70 centuries ago, have not changed in the least. The animals of modern Egypt are found to be the animals of ancient Egypt. This is commented upon in a very interesting article in the *Egyptian Gazette* of February 19 last, and the writer goes on to explain that the absence of variation between the animals of 6,000 years ago and those of to-day need not be taken as any evidence against the theory of evolution, because the environment of animals in Egypt has throughout remained the same.

The same entire absence of variation may be shown to exist as regards plants, cereals, &c., embalmed 6,000 years ago, and those of to-day.

If this is true of Egypt, we may not unreasonably suppose, in the absence of evidence to the contrary, that the flowers of Palestine have remained unchanged, and without variation, during a like period or a very long period. But there is one essential difference. The "environment" varies little if at all throughout Egypt, but in Palestine the soil and climate of Tiberias and that of Mount Carmel, 1,500 to 1,600 feet above the sea, offer a change of environment which is certainly considerable. At Tiberias Palms and tropical plants flourish in the open air, and the Oleanders are in profuse bloom in April. On the slopes of Carmel—often subject to snowstorms and hail—Oaks and Pines flourish, and yet we find the Ranunculus and Anemone at home in both environments, and in neither case can any specific modification be discovered as a result, nor any approach to a hybrid form.

Travellers are constantly speculating as to the identity of the flowers spoken of in Holy

Scripture as the "Rose of Sharon," or the "Lily of the Valley," many supposing the Anemone or Ranunculus to be the former, and the dwarf blue Iris to be the latter. Probably we shall never know with certainty. As the months of spring and summer follow each other one flower gives place to another, and what appears in April to be the "Lily of the Valley" may be quite eclipsed by a still more lovely "Lily" flowering in May or June. *Arthur W. Sutton, Nazareth, in Camp, April 3, 1906.*

[With this letter came specimens of Anemone, Ranunculus, Tulipa, Clusiana, Cistus villosus, C. salviæfolius, &c.]

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from page 180.)

A JOURNEY IN EASTERN TIBET.

June 8, 1904.—After a week's vexatious delay and much difficulty in securing transport, we left Tatien-lu by the South Gate, favoured with a bright sunny morning. Our caravan consisted of three riding animals, four pack animals, three mounted soldiers, half-dozen coolies, a cook, a missionary friend, and myself. My travelling companion, Mr. Moyes, a member of the China Inland Mission, possessed a thorough knowledge of the Tibetan language, which was of the greatest value.

Full of that pleasurable anticipation which precedes a journey into the unknown, we rode gaily along, and quickly left Chinese civilization behind. Following the main road to Batang and Lhassa—a broad but very uneven road—we soon passed the point where the road to the Ya-chia-kang branches off, and turning to the right, we followed the left bank of the torrent which rises in the Cheh-to pass. For a few miles our road was some hundreds of feet above the stream, but ultimately descended to it, and crossed over by means of a fine new bridge built of granite and marble. Primula Cockburniana, with orange-red flowers, and P. vittata, with dark red flowers, were abundant by the wayside, and the steep mountain-sides were gay with Rhododendrons in many colours. We crossed and re-crossed the torrent twice by stone bridges, and once by a rickety wooden bridge, and reached the scattered hamlet of Cheh-to at 4 p.m.

Cheh-to (alt. 10,750 feet) consists of half-a-dozen hovels, which do duty as houses, and is surrounded by bare, treeless mountains. The narrow bottom-lands were partly cultivated with wheat and barley; these were only a few inches high, so late is the season in these wilds. Our inn was fair—much better, indeed, than I had anticipated. Just below the village the torrent bifurcates, and we followed the left branch. Looking backward from our inn a magnificent view of the snow range around Tatien-lu was obtainable. Many of the peaks are very high, and no fewer than nine were capped with eternal snow. On many others enormous quantities of snow lie.

This day we passed the King's so-called forest, which contains very few trees of any size, and consists largely of scrub, in which Rhododendrons—white, pink, red and purple—preponderated. Near our inn were several trees of a species of Picea (P. montigena) [see *Gardeners' Chronicle*, Mar. 10, 1906, p. 146, fig. 56], with bright crimson cones, about 1½ inches long, and just ready for pollination. About a mile below Cheh-to I noted a number of Pine trees. They belonged to a two-leaved species, which has small cones, and is probably new. Just around the inn Larch was the commonest tree. Its bright green foliage and drooping habit gave it a distinctive appearance.

The marshes were yellow with a dwarf species of Caltha and Trollius ranunculoides. Flowers other than Rhododendrons were not plentiful, and I did not collect more than a score of plants.

June 9.—We left at 6 o'clock and followed the road which ascends the left bank of the torrent. For a few miles our path wound along the mountain-side a few hundred feet above the stream. Rhododendrons, Oaks and various shrubs formed a dense scrub. On the opposite bank of the river a few Larch, Abies and Picea occurred, but trees were scarce. A small yellow-flowered Rhododendron was perhaps the most conspicuous of the shrubs. White and pink-flowered Rhododendrons were abundant, and made a fine show.

About an hour and a half after starting we passed a house, and soon afterwards descended to the bed of the stream. The flora was by no means rich, but we gathered several little herbs of interest.

Crossing the stream to the right bank by means of a bridge of logs, the ascent began in earnest. The road, though broad, was in an execrable condition, being strewn with large granite boulders, and was more like the bed of a torrent than a highway. About half a mile before reaching the bridge I noted the first plant of Meconopsis integrifolia. Incarvillea Principis, Rheum Alexandrae, a species of Iris, and two of Fritillaria were growing near by.

Snow was lying a thousand feet below the head of the pass, and the peaks all around were densely covered, but evidently these were not snow-clad all the year round. The view from near the head of the pass was desolate in the extreme—nothing but snow and bare inhospitable cliffs and crags. Alongside the road a dense scrub of dwarf purple-flowered Rhododendron clothed the mountain-side for a hundred feet or so above the path until the head of the pass was reached. I made the pass 14,550 feet, bearing north and south.

In the descent we passed the skeletons of 11 yak, all recently dead, with their bones picked clean by vultures and eagles. We saw fully a hundred of these voracious birds hovering over and still feeding on the carcases. The vultures were very bold, allowing us to get within 40 yards of them. They were of large size, grey in colour, with a lot of white on the wings and breasts. Flocks of snow-pigeon were also common.

Immediately on crossing over the pass we encountered nine more skeletons, three of which were horses. These 20 yak and horses, we were informed, had all perished within the last 10 days; 13 of them belonged to the caravan of an official. The animals in this official's caravan were all commandeered, and no compensation would be paid to the unfortunate owners. This system ("oola," it is called), whilst enabling officials to travel cheaply, is a heavy tax on the people living in the vicinity of the main road to Lhassa, and is partly responsible for the sparse population *en route*.

Descending through moor and bog-land, we reached the tiny hamlet of Tizou, our halting-place for the night, at 5.30 p.m. Tizou consists of three houses situated in a broad valley at an altitude of 13,000 feet. Our inn was the usual flat, mud-roofed Tibetan house with rooms very tiny, dark, and ventilated by a hole in the roof. They were not particularly clean, but after a fatiguing day we were glad of shelter of any kind. Our landlord was Chinese, his wife Tibetan. This is commonly the case hereabouts, and the women do all the work.

The flora on the Tizou side of the pass was very similar to that beyond Sungpan. The country consists of rolling heath-lands. These were covered with a dense scrub, some 2 to 3 feet high, composed of several species of Spiræa, Lonicera, Salix, Berberis, spiny Astragalus, and a dwarf, prickly Oak. But commonest of all was a tiny-leaved, purple-flowered Rhododendron, which takes the place of Heather in these wilds. One of the Spiræas was the Siberian S. laevigata. Save the Rhododendron, none of these shrubs were in flower; indeed, the Willows, Honeysuckles, and other deciduous things were still leafless. In spite of the altitude, the lateness of the season was surprising.

A thousand feet below the head of the pass Incarvillea Principis was very abundant, its rich bright crimson flowers being most conspicuous. A tiny Primula, with rosy-pink flowers, and an Androsace, with red flowers, carpeted the bogs and heaths respectively. Fritillaria Roylei, with variously coloured flowers, was very abundant. Various species of Pedicularis, Anemone, Gentiana, Corydalis, Primula, Cypripedium and other terrestrial Orchids occurred in vast numbers, carpeting miles and miles of the country with their blue, red and yellow-coloured flowers. Though rather poor in species, the country was rich in individuals, and the intensity of their colours was very striking. Near Tizou was a clump of Larch, otherwise the country was absolutely treeless.

The climate is much drier on this than on the Tatien-lu side of the pass. This, and the strong winds which prevail, accounts for the dwarf and scrubby nature of the ligneous vegetation.

A couple of miles before reaching Tizou we passed a solitary Tibetan house. This and the one noted early in the day were the only houses during our 20 odd miles march. These scrub and grass-clad highlands appear lifeless, and the stillness was appalling. Yet, after all, the scene was very much what one's mind conjures up in relation to this wild and unknown land of Tibet. I was not in any sense surprised or disappointed, so closely did the real approximate to my imaginations.

June 10.—Two of our followers failed to arrive last night, and we delayed starting in the hope that they would turn up. About 8 o'clock one of them arrived, and had a pitiful story to tell of his experiences. He had passed the night beneath the shelter of a cairn of stones, in mortal dread of wild animals, ghosts and demons. A snowstorm and a gale of wind had increased his discomfort.

The second man showed no signs of turning up, and the only thing we could do was to send back a couple of mounted soldiers to look for him. There was nothing to be gained by remaining at Tizou all day, and our quarters were such that we were urged to seek better and more spacious ones. Having made what arrangements we could in reference to the missing man, we decided to journey on to An-Tam-pa, 10 miles distant.

Our road wound through a narrow valley about 500 yards broad, flanked by grass-clad hills some 2,000 feet high. Huge flocks of yak and sheep were grazing on these mountain-sides, and the black tents of the herdsmen nestled in the valley. One's curiosity to investigate these tents was checked by the presence of a large Tibetan mastiff who tugged madly at a chain and endeavoured to break away and rend us. The valley was in part heath-like and covered with scrub, in which the heath-like Rhododendron predominated. Other parts were marshy and alive with herbs. A stream meanders through the valley, and Primula Sikkimensis, P. vittata, and Rheum Alexandræ clothed its margins.

About three miles from Tizou we crossed the stream, and from this point onwards the valley was sparsely cultivated. Wheat was the principal crop. It looked nice and green, but was only a couple of inches high. Slate was the commonest rock, and the fields were enclosed by walls of this rock or hedges of the wild Gooseberry. Incarvillea Principis made a grand show to just below the point of crossing. A dwarf Androsace, with golden-yellow flowers, covered acres of moorland. The sun was nearly straight overhead, and our hands and faces were beginning to peel. We lunched *al fresco* in this sunny valley, and after the exertions and fatigue of the previous day enjoyed basking in the warm sunshine. Opposite our halting-place were two or three Tibetan homesteads, and a couple of octagonal towers, now fast falling into ruins. The houses were large square structures, with flat mud roofs and tiny windows—gloomy and comfortless looking places.

Continuing our journey through this grassy valley by the easiest of roads, we reached An-Tam-pa (alt. 12,200 feet) at 3 o'clock, and we were courteously received and housed in the residence of a petty Tibetan chief. The house was a very large three-storeyed structure, of the usual Tibetan style. The ground floor was given over to the horses and cattle, and we occupied good rooms on the second floor. Prayer-cylinders, flags, and other emblems of Lamaism abounded; but, in spite of their "heathen" creed, these simple, unsophisticated children of Nature were most hospitable and obliging.

The flora hereabouts proved excessively poor in species, but the meadows were a pretty sight, being carpeted with purple, yellow and white. These colours were due to myriads of flowers of Erigeron sp., Caltha sp., and Anemone sp. Pæonia anomala was also common by the wayside. The ubiquitous Dandelion was plentiful, and Adonis coerulea, Astragalus sp., Scopolia sp., and Fritillaria sp. were noteworthy. Cypripedium tibeticum, with its monstrous "slippers," occurred sparingly on the heath-lands. Near houses an occasional Poplar was seen, and on the hill-sides an odd Spruce tree or two. Patches of scrub-oak were scattered over the mountain-sides; but the dwarf Rhododendrons and long grass covered the larger areas. In the shingly bed of the stream Hippophae rhamnoides was abundant. *E. H. Wilson.*

(*To be continued.*)

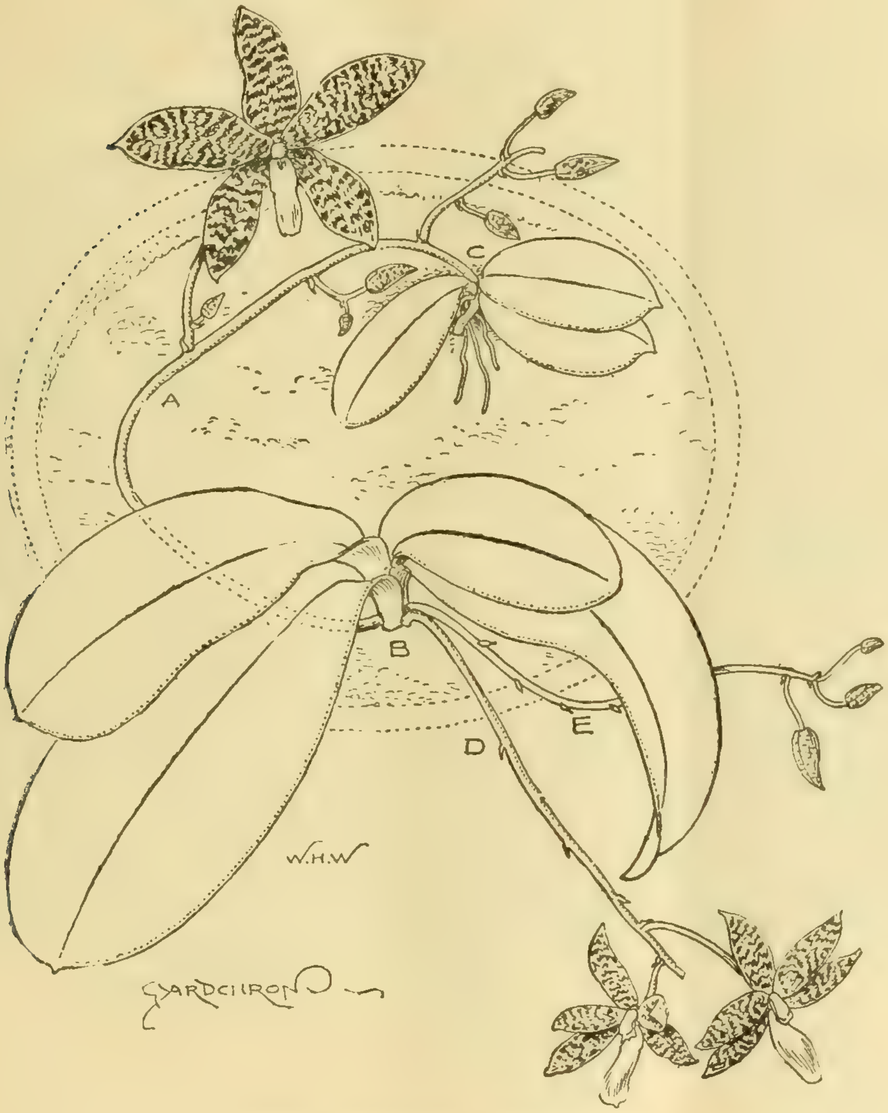

Fig. 107.—Phalænopsis Luddemanniana

A, old flower stalk; B, original plant; C, young plant produced from flower stalk; D and E, new flower stalks from old plant.

PHALÆNOPSIS LUDDEMANNIANA.

It is well-known to Orchid cultivators that some varieties of Phalænopsis, especially P. Luddemanniana, produce young plants from the old flower-stems after they have bloomed, the general practice being to fix the stem upon the surface of the compost around the parent plant, and when the young plant has become established to detach it from the stem, re-pot, and treat it as for the older examples. About two years ago our plant, after flowering, was similarly treated; it soon produced the young plant, but up to the present time has not been separated from the parent plant, and, as will be seen from the illustration at fig. 107, is again producing flowers from the old flower stem between the old and the young plants. The specimen has one other old flower-stem with plant attached, and the young plant, not detached, is now producing three flower-spikes from the base of the growth. I did not include this in the sketch, thinking it would appear crowded. The dotted lines are intended to indicate the top of the pan. *W. H. White, Burford Gardens, Dorking.*

THE ALPINE GARDEN.

THE HOUSTONIAS.

Houstonia is a genus of North American and Mexican plants consisting of some 25 species, of which a few only are in cultivation in Great Britain, but these comprise practically the best of the species hardy in our climate. The genus was named in honour of Dr. William Houston, a noted botanist, who died in 1733. These flowers belong to the Natural Order *Rubiaceæ*, and are among the most exquisite of all rock garden plants.

H. cærulea.—This species with its congener, H. serpyllifolia, referred to below, may be said to comprise the best of the genus. It is scarcely possible to surpass, among Alpine plants, the beauty seen in the various forms of this flower, and it well deserves all the encomiums it has received. It develops dense tufts of small leaves, the lower ones being more or less spatulate in shape, while those developed from the upper parts of the stems are oblong in form; its total height when in bloom is not more than from 4 to 7 inches. The flowers, which are small, are somewhat salver-shaped, and are produced on short peduncles from the tops of the stems. The inflorescences are freely developed, the flowering season being from May to July.

The typical colour of the petals is blue, but there is a scarcer white variety, which is the more attractive from the contrast afforded by a yellow centre.

Unfortunately, this Houstonia is one which cannot be retained in the garden for any considerable length of time without attention. One able cultivator considers that it should be protected from wet in winter, and therefore recommends its being covered during that season. It is, however, from exhaustion by too free flowering that the losses of H. cœrulea are mainly due, and I have practised with great advantage the advice given me a number of years ago by an able cultivator, now passed away, to cut off all the flower stems as soon as the bloom is practically over. One may lose a few flowers by this, but the gain to the plant is very considerable. It must be observed, however, that it requires to be planted in a soil composed of sand and leafmould. Another cause of loss is lack of water in summer, as the species requires plenty of moisture at the roots, but at the same time the soil must have sufficient drainage. Its native habitats in Canada and in the United States are on wet rocks or in open grassy places; thus one of the lower terraces of the rockery will best suit it. Its popularity in America is attested by the nature of the common names it bears. All of these seem in some way to give an indication of the simple beauty of the flower; they are: Bluets, Innocence, Quaker Bonnets, Quaker Ladies, and Venus's Pride.

H. purpurea.—This is the tallest of the three species best suited for our gardens, and it is, at the same time, the least desirable. Its flowers are more funnel-shaped than those of H. cœrulea, and are more purplish or lilac in colour than those of that species. There are two fairly well-defined varieties, named respectively calycosa and pubescens. Its height varies in cultivation, and the stature generally given of six inches is frequently exceeded. The flowers are borne in clusters, and, although not so fine as those of H. cœrulea or H. serpyllifolia, they produce a good effect in their season. It is a native of a more southern district than H. cœrulea, and should be kept rather drier in winter than that species, but in summer it requires plenty of water when in active growth. It is desirable to cut off the flower stems after the blooming period is over. It flowers, as a rule, about the end of May. The soil recommended for the preceding species is suitable for this.

H. serpyllifolia.—Although smaller in flower and rather less vigorous in growth than the foregoing, it is one of the most delightful of our Alpine flowers alike in the neatness of its habit; the attractiveness of its little Thyme-like leaves, whence the specific name; and the beauty of its deep blue flowers. It generally flowers about May, and in its season is exquisite in its whole character. It does not require so much moisture as H. cœrulea, but it should on no account suffer from drought during the summer. It should have the same attention paid in the way of cutting off the flower-stalks. The popular name is the Thyme-leaved Bluet, and it is said to be found on the high mountains of the United States, from Virginia to South Carolina and Tennessee.

Other Perennial Houstonias.—Among the other perennial Houstonias, none of which is at present obtainable in this country, the most likely to be useful is H. angustifolia, which grows a foot or more high. This species has linear leaves, and white or purplish flowers developed in dense clusters, which, while funnel-shaped, spread more fully when open. Its requirements include a drier soil than the preceding species, and it is doubtful if it would be hardy in any but warm localities in the south. H. ciliolata, from the coasts and rocks of eastern Canada and a considerable portion of the Eastern United States, is a dwarf species, from four to eight inches or so high. Its flowers are very small, funnel-shaped, and lilac, or pale purple in colour. H. longifolia, another perennial, has very small pale purple flowers of the same form as those of the last-named. It spreads from Ontario to Manitoba, and in the United States from Maine to Georgia, and prefers dry positions. It is from six to ten inches high. With the many more effective annual flowers at our command there seems little room for the annual Houstonias in our gardens. *S. Arnott.*

MAGNOLIA STELLATA.

This species being of dwarf habit is one of the most suitable for cultivation indoors. At fig. 108 we have reproduced a photograph taken by Mr. C. P. Raffill, which shows that in the Temperate House, Royal Gardens, Kew, it succeeds perfectly. Nevertheless it is hardy, and there are good bushes out of doors at Kew, and in other gardens that flower as freely as the plant illustrated. Under any system of cultivation the plants seldom exceed 4 feet in height. Originally known in English gardens as M. Halleana, the species was first introduced from Japan, but is thought by Professor Sargent not to be a native of that country. Plants introduced by Messrs. Veitch flowered for the first time in this country at Coombe Wood in March, 1878, as we learn from the *Hortus Veitchii* just issued. Plants out of doors usually flower in April, and the flowers, which measure about 3 inches in diameter, are white when fully open, and the somewhat narrow petals become reflexed. There is a variety of which the flowers are of a faint shade of pink. It may be pointed out that Mr. George Nicholson considers that the best time to transplant Magnolias is just previous to the plants bursting into growth, and it is not, therefore, too late to do this work at the present date. In moving a plant it is important that any injured roots be cut away, or they will continue to rot. We reproduce the illustration at fig. 109 as affording a better idea of the flowers and shoots than would be obtained from fig. 108.

THE PROPAGATOR.

HARDY SUBJECTS.

At the risk of stating the obvious, I must say that this is a busy month for the gardener, quite as much so as that from which we have just emerged. The latitude of a place makes considerable difference, there being northern shires, and the whole of Scotland (excepting the south-west, which from the modifying effects of the Gulf stream are as mild as parts of southern England), that are from three weeks to a month later than the counties bordering on the English Channel, so that that has to be taken into calculation by the gardener in those parts, and what may be thought belated information by the southerner will be quite in time in the north as regards seed sowing and propagation by cuttings, layers, and truncheons.

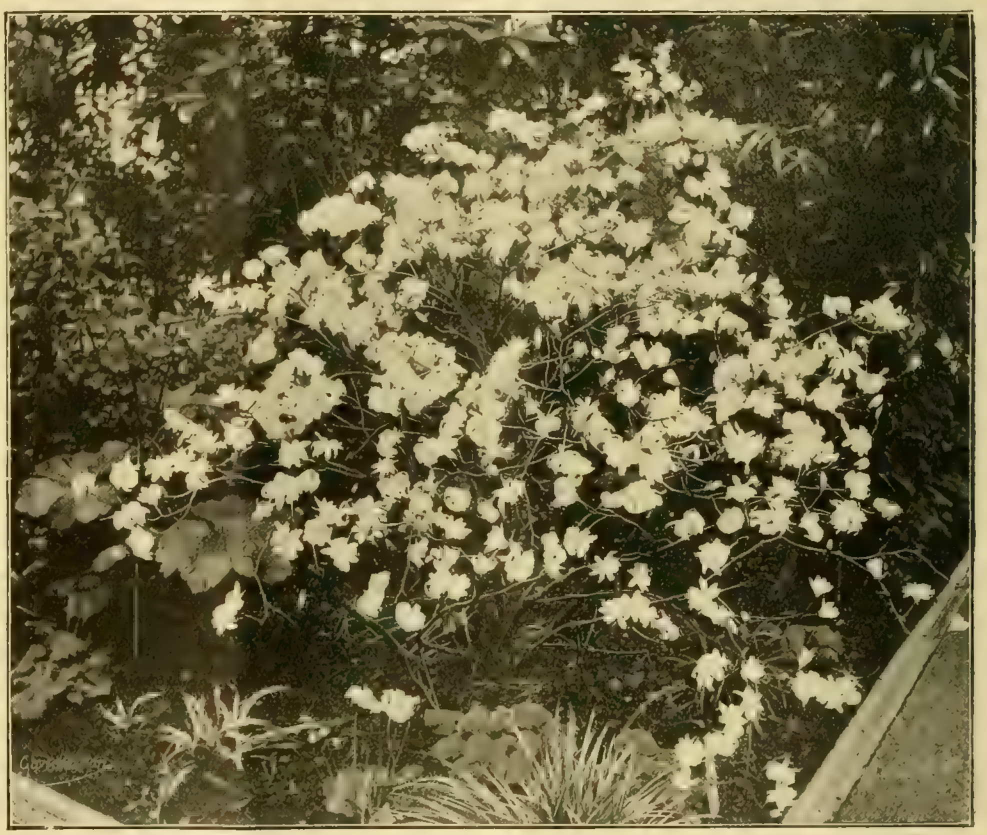
[Photo by C. P. Raffill.

FIG. 108.—MAGNOLIA STELLATA FLOWERING IN THE TEMPERATE HOUSE, ROYAL GARDENS, KEW.

Taking bigger things first, and those that will as time goes on be considered by the owners of gardens as standing before the ephemeral subjects of the day, or the caprice of fashion, as, for example, Oaks of any species or a splendid Conifer from California or China, as comparable with a tree Carnation, tuberous Begonia, or a Primrose from China, I will begin with tree seeds and Conifers first of all.

As regards these for mere garden operations but few need be raised if there is no nursery attached to the estate, and sowing in pots and pans new season's seeds should suffice. Such common species as Scots, Black Austrian, the Corsican, and Larch of common kinds are better left to the nurseryman, and only the choice species raised at home. Personally, I would sow in October or November such as could be then obtained, and keep the pots and pans in a pit from which frost is excluded. If loamy soil and some sand be used, and the seeds sown rather thinly and watered in, if stood on the ground or on coal ashes, but little attention will be needed by the seed-pans, etc., beyond an occasional inspection to ascertain that none gets dry. A depth of one inch will suffice for the larger seeds, and a mere sprinkling of soil for the smaller ones. Some Conifers vegetate in a few months, some in the spring, and others during the summer, but no seed-pans should be emptied for a year or longer time. In the summer they may be stood outside without protection from the rain.

The acorns or seeds of Oaks may be dibbled into freshly-dug firm soil, enriched by leaf mould, placing them at 2 inches apart and 1 inch in depth, treading the surface afterwards.

Providing the acorns are fully developed, but not fully ripe and dry, they may be stratified in cold frames several layers deep, and they will germinate strongly by the advent of March, and may then be carefully taken out without causing damage to the radicle and germ, and planted in lines 4 inches apart, with a 6-inch interval between the lines, leaving them undisturbed for two years.

In many gardens, especially in the North, Willows are much employed for tree fastenings and basket-making, the young men being taught the latter operation by the older men, and thus filling up their time usefully when work out of doors might be impossible. The Willow shoots for these purposes are grown on stools that are kept to a height of about 15 inches, which are grown in lines at a foot, and the lines 2 feet apart. The cuttings, which must consist of 2-3 year-old wood, may be made from 9 inches to 18 inches long, pointed at the butt end, or cut square across, the buds below ground being cut out. If not pointed, a long dibber should be employed when planting them. The smaller growing Willows are grown for light basket work and tieing, and the stronger ones for making hampers, creels, lobster pots, flower sticks, etc. March and April, according to latitude, are suitable months for putting

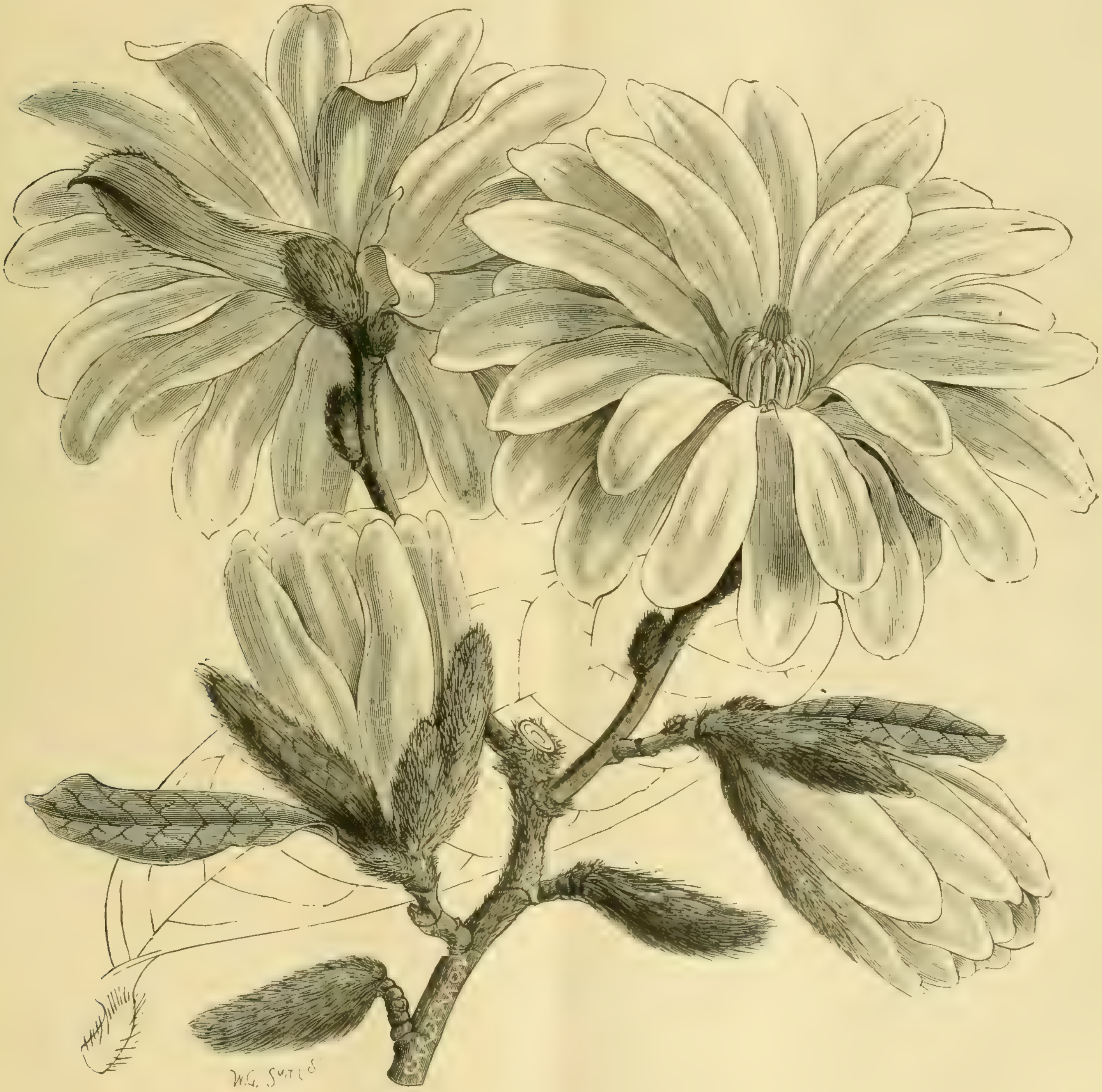

Fig. 109.—Flowers of Magnolia stellata. See text, page 260.

in the truncheons (cuttings). In the same way truncheons are made of Elder, Alder, Poplars, and Mulberry, placing them in their permanent positions forthwith, or in cutting beds for transplantation when rooted.

Those who care to raise their own supply of Rose-stocks of the Dog Rose may sow the seeds at this date in beds, preferably in drills drawn as for Parsley. Some of the plants will appear the first year, and the remainder the year following. Those plants that are of the thickness of a crow quill may be transplanted this month into nursery lines in the later parts of the country, although, generally speaking, March is the better month.

The grafting of varieties of ornamental trees seldom falls within the gardener's province, but those who wish to graft Beech, Platanus, Oak, Ash, Lime, as also species of deciduous flowering shrubs, may do so in the present month. Choose fine weather for the work, and smear grafting wax, "L'Homme Lefort," or place the usual clay and chaff protection round the point of union, and if it crack from dryness at once smear it over with "clay slip."

The seeds of choice Auriculas, Primroses, and Primula Polyanthus may still be sown, and treated cool, sowing them in pans and shallow boxes. Seeds of the "tufted" Pansies, Violas, may be sown this month in the open ground, transplanting them into nursery beds as soon as they have made four true leaves, and selecting a moist, partially shady place for the beds. The true Pansy may be similarly handled, and if the strain should be a good one many beautiful acquisitions may be obtained from seed, more especially from the large-flowered Continental varieties. The Violas are sold in infinite variety, and once seedlings really worth growing are obtained their propagation by slips and division is easy enough. Perhaps a beginner will be better advised to buy some varieties that take his fancy, crossing them promiscuously for seeding purposes, or rely on the above-named methods of propagation for increasing his stock of plants. The method of taking cuttings in September and dibbling these into cold frames in light sandy soil is a rapid one of raising a large number of plants for beds and borders. *F. M.*

NOVEL MODES OF BEDDING.

There is nothing new in beds of white Iceland Poppies, but if these are alternated with pegged-down single magenta-coloured Petunias quite a novel effect will be obtained. The Petunia may be a small flowering variety advantageously, as these are very floriferous.

Solanum sisymbriifolium (syn. Balbisii), a seldom-seen plant, may be recommended for a lawn bed, with a centre group of scarlet-flowered

Cannas, and an edging of dwarf scarlet Begonias. This Solanum has not only attractive flowers, and quaintly spine-encircled berries, but the foliage is pleasingly cut, resembling Thistle leaves, while it is, in addition, covered with dull-red spines.

Arctotis calendulacea is a valuable half-hardy annual, growing about half a foot high, and bearing numerous vivid orange-coloured flowers. On a lawn-bed in full sunshine this plant gives an unrivalled effect, and whether associated with groups of white Gladioli, or with single plants of giant white Asters, it is equally charming. It is useful, too, for filling the small mounds of earth beneath Standard Rose trees.

It may be thought that no Calliopsis can be called uncommon, yet I doubt if many beds show off the merits of Calliopsis Engelmanni, which has feathery leaves quite unlike those of other varieties, and which grows to an uniform height of a foot. I have seen this Calliopsis planted at intervals of a foot, each plant held erect almost invisibly by a fine green stake, all over a round-shaped bed carpeted with the cream-white Viola Sylvia, with just a narrow edging of Leptosiphon aureus, and the bed was justly a most popular one. In addition, it may be remarked, this Calliopsis has a golden centre, and not the usual dark one.

A small bed, and one not of importance, may well be filled with the Tom Thumb strain of Clarkia integripetala; seed of this can only be bought in mixed colours, I believe, but the shades all harmonise, and it is easy to obtain a good show by merely sowing in April, this annual being such a quick grower.

The annual grass, Hordeum jubatum, will give an unique effect sown in clumps at intervals in a bed of scarlet Verbenas or Ivy-leaved Pelargoniums; it can also be employed with the usual pink Ivy-leaved Pelargonium.

A very dry, sun-scorched, small bed may be made beautiful with Dianthus cruentus as a filling, either with or without white Marguerite Carnations for more height. This Dianthus is one of the Rock Pinks, is sweetly perfumed, grows a foot high, and has plentiful scarlet crimson flowers.

Double snow-white Balsams make a delightful centre mass for a lawn bed, and a belt of Orange Iceland Poppies around them, the soil carpeted between the Poppies with Leptosiphon aureus, or, better still, Violetta "Gold Crest" will be found an exquisite arrangement.

Quite a rare plant for bedding out in summer is the biennial Hibiscus "Golden Vase." This is sometimes grown for greenhouse decoration, but it will thrive as a bedding plant if not planted out until the end of May. The exceptionally handsome erect habit of the plant entitles it to more use, and it carries a great number of large, deep cream-coloured blossoms. It is a tall grower, being often more than a yard and a quarter in height. A suitable subject to associate with it is Nemesia strumosa, as this shows similar deep cream shades, as well as others of apricot, orange, dull rose, and lavender.

Eryngiums are not often employed in beds, but the variety Bourgati is eminently suited for placing at intervals among orange or yellow coloured flowers of lower growth, such as Violas, Tagetes pumila, French Marigolds, or yellow Begonias. Its stems and leaves are quite a bright steel blue, as are also the flower-bracts. It grows two feet tall.

Humea elegans alba is a stately specimen plant for the centres of lawn-beds; it will sometimes reach a stature of six feet; its feathery white inflorescence has a novel appearance, and its foliage emits a pleasing perfume. It looks well rising from a bed of double scarlet Zonal Pelargoniums. *M. J.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Dendrobiums.—Strong growing Dendrobiums as D. Dalhousieanum, D. fimbriatum, D. clavatum, D. calceolus, D. moschatum, &c., should be grown in pots, and they will make roots freely in a compost of fibrous peat three parts, and sphagnum moss one part, with a free addition of broken crocks. After repotting is done, a sufficient number of the tallest growths should be tied to neat stakes to hold the plant firmly in position. The evergreen or raceme-flowering section, as D. thyrsiflorum, D. densiflorum, D. suavissimum, D. chrysotoxum, D. Farmeri, &c., also the rare hybrid D. illustre, are now commencing to show their flower-buds, and in order to assist them to develop their spikes, the plants should be afforded rather more water at the roots, and a warmer atmosphere than that of their growing quarters. The distinct hybrid D. Dalhou-nobile should receive the same treatment. D. Brymerianum, with its golden yellow coloured flowers and beautifully fringed lip, requires a rather moist atmosphere, and, as red spider frequently infests the foliage, should be frequently syringed well up under the leaves. These two sections of Dendrobium should be repotted, if necessary, when the new growths are several inches long, but it is not always advisable to cut away any of the back bulbs that are not dead, as some of them will continue to produce flowers for some years to come, even if they remain leafless. The distinct varieties of D. superbum are well worth growing, especially D. s. Huttoni, which has pure white sepals and petals, the centre of the labellum being a dark, rich shade of purple; D. s. Burkei, with flowers of nearly flesh colour, and the rare D. s. Dearei, which has pure white flowers. The plants having a naturally pendulous habit, it is advisable to suspend them to the roof of the house, and for this purpose the ordinary flower-pots, with suitable copper-wire handles attached, are preferable to shallow pans or baskets. Such species as D. Jamesianum, D. infundibulum, D. Kingianum, D. Wattianum, E. subclausum, D. glomeratum, D. linguæforme, and D. teretifolium require an atmospheric temperature a few degrees warmer than that of the Odontoglossum house. The two latter species thrive best when fastened to teak wood rafts, and suspended in a very light position. The recently imported plants of D. albo-sanguineum should have their roots placed in crocks only, and be kept in an atmosphere of intermediate temperature until growth is apparent, when the plants should be repotted and placed in a more genial atmosphere.

Shading with flour and water.—At this time of the year we take the opportunity at Burford, whenever the weather is suitable, to lightly stipple the roof glass of the houses outside with a mixture of ordinary house flour and water, making it to the consistency of very thin paint, and put it on the glass as thinly as possible, using an ordinary paint brush for the purpose. When such a mixture has been applied the glass remains perfectly cool to the touch, even when strong summer sun is shining directly on it, and this is certainly not the case when paint or other minerals have been used. Previous to using the mixture it is necessary to see that the glass outside is made perfectly clean and dry, and that there is no water lodging in the laps; the glass must also be quite dry on the inside. The best time for the work to be done is when the sun shines directly on the roof, so that the mixture will dry quickly on the glass. During the operation the plants should either be removed, or be covered with light tiffany or other suitable material. By adopting this method I find that plenty of diffused light can reach the plants, and at the same time the sun is prevented from scorching them. The cultivator is also the better enabled to prevent extreme fluctuations in the atmospheric temperatures and therefore to keep the conditions of the houses more in harmony with the requirements of the plants. Another great gain is that the plants receive far more natural heat from the sun than they do when the blinds are drawn from early morning until evening. Even during the hottest days of the year the blinds need not be let down nearly so early in the morning as when the glass is clear, and they may be drawn up several hours earlier in the afternoon. By the autumn the whitening on the glass becomes worn and thin, thereby allowing a gradual increase of sunlight to reach the plants, which is greatly beneficial in bringing about the maturation of growth. In the Odontoglossum house where the open lattice wood blinds are in use, and where they are elevated six or eight inches above the glass, this kind of shading is extremely valuable, for when the blinds are down on hot, sunny days, a very cool and equable atmosphere within the house is easily maintained. The weather during the past two seasons has afforded a capital test for this kind of shading, and at Burford the results have been quite satisfactory so far as the majority of the Orchids are concerned, especially for the large number of species and varieties in the East Indian house, also for Dendrobiums, Cattleyas, Lælias, Cypripediums, and Odontoglossums.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Vines and Peaches with borders out-of-doors.—These should be attended to, and if the top soil appears to be at all sour let it be removed, and in its place apply a compost of turfy-loam, wood-ashes, and a little Peruvian guano. Next afford a good watering with a rose can, to settle the soil, and cover the borders with a mulch of manure obtained from a spent Mushroom-bed, which will help in retaining the moisture, and in preventing the soil from cracking, as otherwise it would do under bright sunshine. I have found out that such cracking is liable to injure the small fibrous roots.

Figs.—The fruits on the earliest pot-trees are now approaching to the ripening stage. In order to enable them to finish perfectly, afford them warm liquid manure and Peruvian guano on alternate occasions. The atmospheric temperature at night may be raised to 65°; maintain the atmosphere always in a moist condition by syringing the trees each morning and afternoon. Attend to the stopping and regulation of the shoots, so that the fruits may be the better exposed to the influences of the sun and light, which will greatly improve their flavour and colour. Admit air when the atmospheric temperature rises above 70°, and increase it according to degree of sunshine; close the house early in the afternoon after syringing, and damp down with a little manure-water. When the fruits show signs of ripening let the use of artificial foods be discontinued, and keep the atmosphere a little cooler and drier, but the roots of the trees will need to be kept moist by the use of clear water. The borders of old-established trees should be given a mulch of horse-manure, which will assist them in swelling their fruits. Be careful to supply the borders with water as often as this is necessary, and if roots are plentiful liquid manure may be freely applied. Stop the shoots at the fifth leaf, and remove any weakly growths, which will prevent overcrowding.

Pot-Vines.—These have made good progress during the present month, and the Grapes are commencing to colour. More ventilation will now be required in the house, and plenty of clear water at the roots of the trees. Allow the lateral growths to extend more than hitherto, and they will afford a natural shade to the bunches. Keep the foliage clean from red-spider by hand-sponging.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Plumbago rosea coccinea.—This useful variety of an old and well-known plant is not cultivated so extensively as its merits deserve, for it will flower during the whole of the winter months. It possesses a free branching habit, and produces long panicles or sprays of flowers admirably suited for dinner table decoration, for although they do not long remain fresh when in a cut state, the freedom with which they are produced ensures an abundance of sprays for replenishing. Cuttings should be secured at once, and are best taken from the young growths, but if large plants are desired, the old stock plants should be repotted, removing a portion of the old soil in the process and reducing some of the strong roots. The growths should be trained to stakes during the summer months, and the plants given a place in an intermediate temperature, but they should be transferred during their flowering period to a house in which Melons have been grown. The shoots can then be trained to wires on the roof, where the plants are seen to the best advantage. As a potting medium, use a mixture of fibrous peat and leaf-mould, with some sand and a small portion of loam. Use the syringe freely among the plants during hot weather.

Carex variegata.—This pretty foliage plant, if grown in small 60 pots, will be found useful for decorative purposes. The recurving leaves have a graceful appearance, a clear white stripe running through their centre. Propagation of the plants is effected by division, for each piece detached with a little root will grow quickly, if placed in a moist position in the stove. A large proportion of sand should be used in the potting compost, which must not be of too rich a nature, otherwise the variegation will not be pronounced.

Richardias.—Plants that have finished flowering should, providing the weather is genial, be placed out of doors in the full sunshine; at the same timo gradually reduce the suppiy of water at the roots so as to thoroughly ripen the growth. If the plants are to be kept in their pots, these should be placed on their sides until growths start again about July.

Salvias.—These plants must not be allowed to become root-bound in their present stage of growth, and should forthwith be transferred into 6-inch pots, affording every encouragement to induce free growth. When the roots have permeated the new soil, the pinching out of the points of the shoots should be continued to promote a bushy growth. A few plants grown as standards are always attractive in the warm conservatory in the winter months. Maintain a moist atmosphere by the free use of the syringe, keeping the plants close to the glass in a temperature of 55° to 60°.

General Remarks.—If old stools of Poinsettias were treated as advised in the Calendar of March 24, an early batch of cuttings will soon be available. Follow the instructions contained in that note as to propagation. The earliest section of show Pelargoniums will now be showing their flowering spikes. Afford the plants manure water at least twice a week, with an application at intervals of some good fertiliser. Before they break into flower, see that the plants are free from insect pests, affording light and frequent fumigations, which are the more economical in the end.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth,
St. Fagan's Castle, Glamorganshire.

Paved Walks.—In many gardens—particularly old-fashioned gardens—walks laid with flat paving stones are often seen, their every form clearly outlined by small flowering plants, Ferns, and Mosses, which, together with the weathered greyness of the stone and informal tracery of the paving, give a very pleasing impression. Where the opportunity presents itself their reproduction is well worth the necessary trouble and expense, but it must be in a position where they will be appropriate and consistent with the surroundings, and they should be used for a special purpose, such as a walk near the house or to create a feature in a particular part of the garden. In making new paths of this description it is advisable to use only sufficient cement to keep the stones firm, according to the extent it is intended to use the walk. The stones should be broken into all shapes to prevent any idea of design, and in laying them spaces an inch wide should be left between them, while here and there irregular spaces three or four inches in extent might be contrived with advantage. To complete the walk, and to make it acceptable to the plants, it is so desirable to encourage for future effectiveness, fill up the crevices and chinks between the stones with leaf mould, which is particularly suitable as a rooting medium for this class of plant, taking care to ram it in firmly. There are numerous plants which are singularly adapted for adorning these paved walks. Among the foremost that occur to my mind are the beautiful little Linarias, amongst which the common British Ivy-leaved Toadflax (L. cymbalaria), with its graceful creeping habit and pretty flowers, is not the least delightful. L. pilosa and L. pallida, with large, conspicuous, purple blossoms, but with dwarf trailing habit, grow well in such positions, while L. alpina and L. alpina rosea flourish in the moister parts of the walk, where they sow themselves readily. All the Linarias are raised easily from seed, which should be sown now, and once established it will be found that they sow themselves freely. Another excellent subject for this kind of work is Mentha Requieni, a small creeping plant, thickly set with minute dense foliage, having a delightful peppermint odour, which is quickly detected when stepped upon. It is very easily propagated by breaking it up into small pieces and inserting them in boxes of leaf-mould, and, when planted between the paving, they spread rapidly. The Sandworts, especially Arenaria balearica, are splendid plants for the paved walk. This pretty little plant, with its countless miniature, starry flowers in spring, soon leaves the leaf-mould, and completely covers the whole breadth of stone that it is near. Like the Mentha, it is readily increased by division, and is very easy to grow. The Violet Cross (Ionopsidium acaule) is another charming little plant eminently suited for growing in these chinks. It flowers six or seven weeks from sowing, and afterwards sows itself freely, reappearing year after year. If sown at the present time it will flower in June, and will last a considerable period in beauty, then seed, and fresh seedlings will give a late autumn display. It is a small Portuguese annual, about 2 inches high, with dense tufts of violet-coloured flowers. Grammanthes gentianoides, a pretty half-hardy annual, having orange-coloured flowers when first expanded, but which become deep red when fully opened, is another. It is about 2 inches in height, and of tufted habit. This, when used on the paved walks, should be planted to the sides, where there is less likelihood of its fleshy leaves being bruised by the feet. This also applies to the Portulacca and several of the Sedums, which might very well be used. Several of the small growing Campanulas may also be planted in such walks.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder,
Bart., Leonardslee, Sussex.

Disbudding Peach and Nectarine Trees.—Many trees will now be sufficiently advanced to admit of their being disbudded. In disbudding take away all foreright and useless shoots, and see that a strong "break" is left at the base of each remaining shoot, for these will form the fruiting branches of the following season. Leave at the apex of each growth a suitable leader, which, if not required, may be pinched back at a later period. In the case of younger trees, as many growths should be left as are requisite to fill the space of the wall, taking care, however, not to train more wood than the tree can properly mature. In all cases distribute the growths evenly and thinly, in order that the wood may become thoroughly ripened. Do not hesitate to remove any non-bearing branches whose place will be more profitably occupied by new growths. It is at this season of the year that overcrowding of the branches becomes apparent, and as crowded trees are harbourers of insect pests, and develop puny fruits and unripened branches, the importance of proper thinning of the growths cannot be too deeply impressed. Disbudding should not all be performed at one time, but the trees should rather be gone over three times, taking away the strongest leads first.

Insect Pests.—Keep a sharp look-out for aphis and red spider. A suitable insecticide is a little sulphur mixed with milk. This should be sprayed on the under surface of the foliage, especially during sunny weather. As the leaves have not yet covered the walls from the sun's rays, the bricks get very hot, and thus red spider is soon developed. If the sulphur mixture is applied several times, especially on the bottom of the wall, the fumes will rise amongst the foliage. Apply the spray at a temperature of from 70° to 75°, and never on any account use cold water to the tender foliage of these trees.

Thinning the Fruit.—This should be commenced at an early stage, removing first all fruits that are in unsuitable positions. By thinning early the remaining fruits are benefited, and swell more quickly.

Figs.—These trees are now rapidly starting into growth, and should frost appear imminent a temporary protection must be afforded them.

Newly-grafted trees should be sprayed with lukewarm, soft water, especially now we are experiencing such dry weather and hot sunshine. As soon as the scions commence to grow, place a small stake in the ground and tie the young shoots as soon as they are long enough. A good plan in the case of seedling stocks is to drive a strong stake into the ground at each end of the row, and then tie a Bamboo cane across, tying the smaller stakes to this cross one.

Watering.—Attend to the watering of trees on south walls, and also in the case of newly-planted trees in other positions. Many trees suffer at this season of the year from an insufficient supply of moisture. The rainfall of March was below the average, and up to the present (April 18th) no rain has fallen during the present month. Therefore, on soils of a light nature, many trees will require moisture applied to their roots. An abundant display of blossom is seen on all kinds of fruit trees, and, should we escape frosts, there should be large crops. In these gardens 8° of frost was registered on the 14th inst., and 3° and 5° respectively on succeeding mornings, but as the conditions were very dry little damage resulted.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of
Portland, Welbeck Abbey, Notts.

Planting out Onions.—Onions raised from seed sown during the early part of the year will now be fit to transplant into the open ground. Fork the soil again before planting, and, to obtain the largest-sized bulbs, place the rows at least 15 inches apart, allowing a foot between the plants in the rows. With a spade dig suitable holes to receive the seedlings, and lift them with as large a ball as is possible, planting them about an inch deep, sufficient to make them firm in the ground. Apply water immediately after planting. During fine afternoons apply copious syringings of clear water to encourage quick growth, and keep the soil well loosened between the lines with the hoe. When the bulbs begin to swell apply a topdressing of spent manure from a mushroom bed, and give a dressing of soot and a sprinkling of nitrate of soda once a fortnight.

Leeks and Celery.—Crops of these vegetables intended for early supplies or for exhibition purposes will also be ready for transplanting in the open ground, and no better system can be followed than that of planting in trenches made 2 feet wide and the same in depth. Place the plants 12 inches apart in single lines. A little shelter may be necessary during cold nights until they become established. Water the plants well to begin with, and spray them daily with clear water when the weather is fine.

Main Crop Celery.—The seedlings should now be transplanted into frames, and before they are too large and their roots become matted together, for this often causes "bolting," which, however, can easily be avoided by timely attention. Much success depends on the plants being removed with large balls when taken from the frames for their final planting, and to secure these place 4 inches of well-rotted cow dung on a hard bottom of ashes, with 2 inches of soil on the surface of the manure. Place the plants from 4 to 6 inches apart. The roots will soon ramify through the whole compost, and when lifted later with the trowel will receive but the slightest check. Keep the atmosphere of the frame close for a few days, after which gradually harden the plants, and allow them to grow as slowly as possible consistent with healthy growth.

Runner Beans.—The first sowing out of doors can now be made with a fair prospect of safety. Select a piece of well trenched land, where the roots can easily secure food and moisture, which are essential points in the successful culture of these plants. Sow in a double line very thinly, allowing at least 9 feet between the rows, using the intervening space for growing some other light crop. Great improvements have been made in the varieties of this vegetable, and, with Veitch's Hackwood Park Success and Sutton's Best of All, fine crops of good quality can easily be secured. But the newer selection of Messrs. Carter's Scarlet Emperor has eclipsed any I have tried, both in quality and in fruitfulness, and much credit is due to the raiser, Mr. Lye, of Sydmonton Gardens.

Vegetables in Frames.—The recent sunny weather has suited all kinds of vegetables in frames, and there should be no lack of supply from now onwards, and until the early crops are available out of doors. The shelter of unheated frames is of the greatest advantage in gardens at this season. But how poorly they are provided in many places goes without saying. The flavour and tenderness of vegetables in cold frames are quite equal to that of those cultivated in the open, and with their help the season is advanced by at least two months.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR MAY.

TUESDAY,	May 1	Roy. Hort. Soc. Coms. meet. National Amateur Gard. Assoc. meet.
WEDNESDAY,	May 2	Croydon Flower Show.
THURSDAY,	May 3	Linnean Soc. meet.
SATURDAY,	May 5	Soc. Franç. d'Hort. de Londres meet.
WEDNESDAY,	May 9	Roy. Caledonian Hort. Soc. Show in Waverley Market, Edinburgh (2 days).
SATURDAY,	May 12	Dutch Gardeners' Soc. meet.
MONDAY,	May 14	United Hort. Ben. & Prov. Soc. Com. meet.
TUESDAY,	May 15	Roy. Hort. Soc. Coms. meet.
WEDNESDAY,	May 16	Roy. Bot. Soc. Show at Regent's Park.
SATURDAY,	May 19–27	Paris Exhibition.
TUESDAY,	May 22	Devon County Agric. Soc. Show at Tavistock (2 days).
THURSDAY,	May 24	Linnean Soc. meet (Anniversary).
FRIDAY,	May 25	Roy. Bot. Soc. meet.
SATURDAY,	May 26	Dutch Gardeners' Soc. meet.
MONDAY,	May 28	Ann. meeting and Dinner of Kew Guild at Holborn Restaurant.
TUESDAY,	May 29	Roy. Hort. Soc. Show in the Temple Gardens, Thames Embankment (3 days).
WEDNESDAY,	May 30	British Gardeners' Assoc. annual meeting of members at Essex Hall, Essex St., Strand.
THURSDAY,	May 31	Bath and West and Southern Counties Soc. Show at Swindon (5 days).

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—50·9°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, April* 25 (6 P.M.): Max. 50°; Min. 38°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April* 26 (10 A.M.): Bar., 29.7; Temp., 46°; *Weather*—Dull, with cold winds.

PROVINCES.—*Wednesday, April* 25 (6 P.M.): Max. 47° South-west coast of Ireland; Min. 42° Liverpool.

SALES.

WEDNESDAY—

Sale of Palms, Japanese Irises, Alsophila, &c., at Stevens's Rooms, King Street, Covent Garden, W.C.

Herbaceous and Border plants, Begonias, Gladiolus, Palms, Ferns, Rhododendrons, &c., at 12.; Aspidistras, Dwarf trees, &c., at 5, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—

Imported and Established Orchids from various sources, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

Mutations. A second edition of Dr. De Vries' notable book on the Origin of Species and Varieties by "mutation" has been issued, and may be had from Kegan Paul, Trench, Trübner and Co. Lamarck is reported to have said that the origin of species is a natural phenomenon, Darwin that it is an object of inquiry, whilst De Vries goes a step further and says it is an object of experimental investigation, thus extending the significance of the closing sentence of Linnaeus' Philosophia Botanica, "In scientia naturali principia veritatis observationibus confirmari debent." The ordinary notion is that species have been evolved from previous species by slow degrees. De Vries, on the contrary, says that they are produced from existing forms by sudden leaps, thus reversing the dictum of the great Swede: "Natura non facit saltus." Gardeners are familiar with the production of "sports," but generally attach no idea of permanence to them; but De Vries has proved that some of these variations not only occur suddenly, but that they can be, and are, reproduced by seed, and thus become as "constant" as ordinary species growing under unchanged conditions are, or are said to be. A "mutation" may thus give origin quite suddenly to what is for all practical purposes a new species. Observation, and especially experimental demonstrations, are required to confirm these views, and these have been furnished, not only by De Vries himself, but by Dr. MacDougal, the editor of the present volume, and by others. Dr. MacDougal says that the experiments carried out in the New York Botanic Garden corroborate the conclusions of De Vries in all important particulars.

The existence of these "mutations" and their occasional reproduction are beyond dispute, but to what extent they are sufficiently constant as to be considered of specific value remains to be proved on a large scale by independent observers. Various other problems await solution, such as the reasons why "mutation" apparently occurs in particular species only, and not in others, and why they only occur at a particular time or stage of growth.

In the case of the twisted teasels, Professor Vries says that he has succeeded by selection in securing a race producing at least 34 per cent. of twisted stems. Several years ago the Amsterdam Professor was good enough to send us seeds of his contorted teasels, which were sown in the garden. The plants come up each year, but quite free from any twist. The plants flower, and the seeds are spontaneously dispersed; seedlings come up abundantly, but no contortion was observed till the summer of 1905, when, by cutting out the central growing point and by "pinching" most of the tips of the "laterals" as they were produced, we succeeded in inducing one of the many to become twisted.

Alluding to the practices followed by gardeners in selecting and raising new varieties, Dr. De Vries points out that only a few of the horticultural novelties are real "mutations," though they do occur from time to time (p. 608). The oldest case of the kind is the cut-leaved variety of Chelidonium majus, the history of which is detailed. This comes true from seed, and has been known to do so for generations, hence by some it is considered to be a species. It is, however, nowhere found in a wild condition, on which account many botanists, we imagine, would consider it as a garden variety only. We mention this to show the difference of opinion that may quite legitimately be held as to the precise status of any particular form, species, variety, state, mutation, or what not.

Incidentally, we find a practical illustration of the Mendelian law. A dwarf variety of Saponaria calabrica was observed. The characteristics were observed in the next generation, but in the third the dwarfed condition was no longer apparent, and the plants were thrown away as valueless. According to our present conceptions we should expect that this plant was of hybrid or crossed origin, and that in subsequent generations the progeny would have separated into one-fourth dwarfs and three-fourths normal specimens (p. 613), and that gradually the dwarfness would have become so dominant as to be practically fixed. Numerous illustrations of sports which originated suddenly as cut-leaved trees, as also pendulous and fastigiate varieties, are mentioned, and many similar instances, familiar enough to gardeners as "sports," but which have not generally been considered as starting points for new species. Weeping Ashes, Cactus Dahlias, and crested Cyclamens, for instance, would hardly be accorded specific rank; although this is very much a question of interpretation and of individual opinion.

Alluding to the work of Luther Burbank, Dr. De Vries, a much more trustworthy witness than some other eulogists have been, says that "his methods are hybridisation and selection in the broadest sense and on the largest scale." So far, unless in their extent, the methods do not differ from those in common use. "One very illustrative example of his methods must suffice to convey an idea of the work necessary to produce a new race of superlative excellence. Forty thousand Blackberry and Raspberry hybrids were produced and grown until the fruit matured. Then from the whole lot a single variety was chosen as the best. It is now known under the name of 'Paradox.' All others were uprooted, with their crop of ripening berries, heaped up into a pile twelve feet wide, fourteen feet high, and twenty-two feet long, and burned. Nothing remained of that expensive and lengthy experiment except the one parent plant of the new variety. Similar selections and similar amount of work have produced the famous Plums, the Brambles, and the Blackberries, the Shasta Daisy, the Peach Almond, the improved Blackberries, the hybrid Lilies, and the many other valuable fruits and garden flowers that have made the fame of Burbank and the glory of horticultural California." So far, the few Burbank productions which have reached our shores have hardly warranted the enthusiastic praise bestowed upon them, but the climatal conditions of California are so different from our own that this is no matter for surprise. The wholesale destruction of records and evidence above referred to is, from a scientific point of view, to be greatly deplored; from a practical standpoint it would, judging from what has been previously stated, have probably been better had some of the cremated ones been allowed a longer period of existence wherein to develop their latent characteristics. But from the huge numbers dealt with it is obvious that this could not be done.

Dr. De Vries' lectures are full of facts and inferences deserving the most careful consideration, and they are placed before the reader in so lucid a manner that his book will be read with pleasure by all interested in the fascinating subject of plant-breeding. The final sentence is worth quoting as expressing the views of many of our naturalists: "Natural selection may explain the survival, but it cannot explain the arrival, of the fittest."

Our Supplementary Illustration.—The portion of the Palm House in the Botanic Garden, Edinburgh, shown in the supplementary illustration, was built between the years 1856 and 1858, when the late Professor J. H. Balfour occupied the chair of Botany. In the *Transactions of the Botanical Society of Edinburgh* for 1858 are stated the following dimensions: Length 96 feet 6 inches, width 57 feet, and height 70 feet 6 inches. This house became a necessity at that time owing to the specimen Palms having outgrown the Palm House then in existence and which still forms a part of the present house, although it cannot be seen in the illustration. The house is not strictly confined to the cultivation of Palms, although it contains some large specimens of Livistona chinensis, Archontophœnix Cunninghamiana, and Cocos flexuosa, all about 50 or more feet in height, as well as many others not requiring a strictly tropical atmosphere. A fine plant of Dacrydium cupressinum about 40 feet high is conspicuous, its gracefully drooping branches being most decorative. Large plants of Phyllocladus trichomonoides, Agathis robusta, and A. australis are also prominent features, while Bamboos, Tree Ferns, Dracænas and others help to furnish the lower parts of this structure. The illustration of the pond conveys a good idea of its shape, which is almost that of a half circle. It is of a formal outline, the margin of one side being converted into stone boxes for the reception of submerged or bog plants. In these boxes are grown such plants as Irises of kinds Alisma Plantago, Calla palustris, Ranunculus flammula, Typhas, and many others. On the bank immediately behind the pond are moisture-loving plants such as Primula sikkimensis. P. grandis, and P. denticulata, Helonias bullata, Gunnera manicata, G. scabra, Spiræ, Saxifraga aquatica, S. peltata, and many others flourish here. At each end of the pond upon the banks are groups of Phormium tenax and its varieties. These thrive well, and the type flowers and produces seed annually. On the bank thrown up by the excavation of the pond is a large group of Irish Yews, while double-flowering Gorse occupies the face of the bank reaching to the edge of the water.

Hortus Veitchii.—Under this title we have received a copy of what is in every way a remarkable production. It is not only a history of the Veitchian firm and its doings but a very substantial contribution to the history of Horticulture from before the middle of the nineteenth century. We shall take an early opportunity of referring more at length to this sumptuous volume.

Royal Horticultural Society.—The next meeting of the Committees will be held on Tuesday, May 1, in the Society's Hall, Vincent Square, Westminster. A lecture on "Phenology as an aid to Horticulture," illustrated by lantern slides, will be given by Mr. E. Mawley, V.M.H., at 3 o'clock p.m.

Gardeners' Royal Benevolent Institution.—The "Geo. Monro Concert Committee" has forwarded a donation of £10 10s. to this institution, being part proceeds of the recent successful concert held under their auspices at the Queen's Hall, Langham Place, London.

Horticultural Club.—The next house dinner of the club will take place on Tuesday, May 1, 1906, at 6 p.m., at the Hotel Windsor, when Professor Farmer, F.R.S., has kindly promised to talk about "Parasitism." Amongst the guests on this occasion will be Colonel Prain, the Director of the Royal Gardens, Kew, and Captain W. E. O'Connor, C.I.E., whose name will be remembered for his heroism in the recent expedition to Tibet.

Nurserymen as J.P.—Mr. T. H. Harraway, nurseryman and seedsman of some thirty years' standing in Warminster, has been appointed Chairman of the Urban District Council.

Oncidium concolor.—Messrs. Stanley & Co., of Southgate, obligingly furnish us with a photograph of a well-grown specimen of this Orchid. Visitors to a recent show in Vincent Square will remember a group of this brilliant yellow Oncidium, evidencing superior cultivation, shown by the same firm.

Presentation.—Mr. J. Jones, who for twenty years has occupied the position of gardener at Terrace House, Southampton, has been appointed Gardener and Steward to Miss Seymour, Knoyle House, Wilts. Mr. Jones has been for eighteen years a much respected member of the Council of the Southampton Royal Horticultural Society. His removal is much regretted by his colleagues, who, to mark the great esteem in which Mr. Jones was held, decided to present him with a handsome timepiece. The presentation was made by the Mayor of Southampton at a farewell supper, held at the Star Hotel, High Street, on the 17th inst.

Country in Town Exhibition.—Last year we called attention to an interesting project in the shape of a "Country in Town" Exhibition, and it has now been definitely decided to open it in the Whitechapel Art Gallery, from July 5th to the 19th. Earl Carrington is the President, and Mr. J. C. Medd, Chairman of the Executive Committee, while Canon Barnett, of Toynbee Hall, is the Treasurer, and Mr. Wilfred Mark Webb (of the Selborne Society) Honorary Secretary. The exhibition will consist of five sections. In the first will be living things, such as plants which have been, or might be, grown in London and in London schools, aquaria, vivaria, and beehives. Pictures and models from London and other urban centres will come into a second division and show the planting of streets and open spaces, children's gardens and playgrounds, town gardens, garden suburbs, and railway embankments. The third section will be given over to material and appliances. The fourth will consist of plans specially drawn up for the improvement of certain areas in London, while the last will deal with city life in Japan and other countries. As no charge will be made for admission to the exhibition, the committee would be very glad of contributions towards its cost. These should be sent to the treasurer, while all offers of help in the organisations and suggestions for exhibits should be made to the Honorary Secretary of the "Country in Town" Exhibition, at Toynbee Hall, Whitechapel, E.

Timber.—To those interested in the structure and diseased conditions of wood, in the felling, transport, and the commercial utilisation of timber, and who are not deterred by the French language, we recommend the perusal of and frequent reference to a work by M. Mathey.* It is recommended to the reader in a laudatory preface by M. Daubree, the general director of "Eaux et Forêts." Between the forester and the timber merchant or the consumer is a third person, the manager. He is not merely a man of business, but he is both a skilled manager and a merchant. He must know how to direct workmen of all kinds engaged in the various operations connected with the handling of timber. He must be an expert in his knowledge of the structure and qualities of the different kinds of wood, of the readiest and most economic way of transporting them, and of turning them to the best account from a commercial point of view. A trustworthy book of reference dealing with timber from all these points of view is naturally a great boon to those who have to concern themselves with these numerous and complex details, and such a book is the one of which M. Mathey now issues the first instalment. It is copiously illustrated, has a classified table of contents, and a good alphabetical index.

National Chrysanthemum Society.—The adjourned annual general meeting will be held on Monday, April 30, at Carr's Restaurant, Strand, W.C., at 7 p.m. Agenda: Election of general secretary.

The Revue de l'Horticulture Belge.—We learn that the publication of this important serial, so long edited by Count Kerchove de Denterghem, will be continued under the direction of M. Charles Pynaert, with the assistance of Messrs. De Nobele, A Van den Heede, und Verdonck.

Hats Nature-trimmed.—Messrs. Shearn & Sons send us a photograph of an exhibit of ladies' hats as trimmed by them with natural flowers. There is not the same objection to be raised to these decorations furnished by the florist that there is to the wholesale massacre of unoffending birds for a like purpose. Self-adornment is a natural instinct, and there is no reason why the ladies of Europe should not follow the fashion of their sisters in Burma or the Sandwich Islands.

Spring Flowers at Belvoir Castle.—Mr. Divers informs us that these are now at their best, and will continue to give a good display for several weeks to come. The flower gardens and woodland walks are open for inspection by the public free on every week-day.

Hippeastrums.—In writing in our last issue of the exhibit of Hippeastrums from Major Holford, we inadvertently attached to it the name of Mr. Alexander, who has charge of the Orchids at Westonbirt. The Hippeastrums are grown under the care of the head gardener, Mr. A. Chapman.

The Selborne Society.—Dr. Dudley Buxton, D.Sc., has been elected Chairman of the Council of the Selborne Society for the ensuing year, during which the Society will attain its majority, having been founded in 1885. On May 25, by the kindness of the Civil Service Commission and his Majesty's Office of Works, the annual soiree will be held in the offices of the former, in Burlington Gardens, in the buildings which were formerly those of the London University. The President, Lord Avebury, will preside and deliver an address, while there will be an important exhibition of microscopes and natural history specimens. Members may obtain their tickets from the local secretaries, or in the case of those who are not attached to branches, from the Honorary General Secretary, Mr. Wilfred Mark Webb, at 20, Hanover Square. Visitors wishing to be present can only obtain tickets through members.

Rose Show Fixtures in 1906.—The following particulars of forthcoming Rose Shows are kindly sent us by Mr. Edward Mawley:—June 26 (Tuesday), Isle of Wight; June 27 (Wednesday), Chippenham, Colchester, Farnham, Farningham, Reading and Southampton; June 28 (Thursday), Canterbury, Norwich and Walton-on-Thames; June 30 (Saturday), Windsor; July 3 (Tuesday), Harrow and Sutton; July 4 (Wednesday), Croydon, Ealing and Tunbridge Wells; July 5 (Thursday), Royal Botanic Gardens, Regent's Park (N.R.S.); July 6 (Friday), Gresford; July 10 (Tuesday), Gloucester, Southend-on-Sea* and Wolverhampton†; July 11 (Wednesday), Formby, Helensburgh and Thornton Heath; July 12 (Thursday), Brentwood, Chipping Norton, Eltham, Potter's Bar and Woodbridge; July 17 (Tuesday), Saltaire; July 18 (Wednesday), Edinburgh (N.R.S.); July 19 (Thursday), Dunfermline*; July 20 (Friday), Ulverston; July 24 (Tuesday), Tibshelf; July 25 (Wednesday), Cardiff* and Newcastle.on-Tyne†; July 26 (Thursday), Salterhebble; August 18 (Saturday), Sheffield; September 19 (Wednesday), Royal Horticultural Hall, Westminster (N.R.S.).

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* *Traité d'Exploitation Commerciale des Bois*, par Alphonse Mathey. Paris. Lucien Laveur (Williams & Norgate).

* Show lasting two days. † Show lasting three days.

Narcissus Pearl of Kent.—In our report at p. 253 of the show at the Royal Horticultural Society we inadvertently said that "King Alfred" was exhibited in the Rev. G. B. Haydon's collection; moreover, we are informed that every flower-stem was cut level with the ground. We know nothing of any ill-natured remarks said to have been written on the card. As to the colour, we could not tell what was the colour when the flower first opened, and the tint changes materially after a time. Rev. G. B. Haydon obligingly favours us with the following dimensions of Pearl of Kent:—Average height 11 inches, width of perianth 4½ inches, width of trumpet 1½ inches to 1¾ inches, width of perianth segments 2 inches. Pearl of Kent is out of Madame de Graaf by pollen of Monarch.

"Orchid Dale."—In a recent number of *Indian Planting and Gardening* is an account of the garden, near Calcutta, of a native gentleman who maintains a fine range of plant-houses, and in particular a fine collection of Orchids. Seth Dooly Chand throws open to the public occasionally, his garden as well as his house, which contains many art treasures. That wealthy Indian gentlemen should indulge in such pursuits and exercise so much public spirit is a gratifying circumstance.

Edible Mushrooms.—The Municipal Fungus Market of Zürich is under the supervision of the director of the University Botanic Garden of that city. Official inspections were made on 104 market days in 1904, in which year, we are told, 606 lots were exposed for sale, amounting to a total weight of between four and five tons. The largest number of lots offered on one day (September 27) included some 40 baskets containing eight different species of fungi. In six cases poisonous fungi and others unfit for food were displayed, and duly confiscated. During the whole year the common Mushroom, Agaricus campestris, wild and cultivated, was represented by about seven hundredweight of the wild and six hundredweight of the cultivated form, the morel by less than a hundredweight, and the "stein-pilz," a species of Boletus, by nearly 10 hundredweight. The newspapers frequently report cases of poisoning from the eating of fungi outside the city of Zürich, where probably similar precautions are not taken. It is greatly to be desired that in every instance the public health officers should ascertain the exact species of fungus, so that its name might be communicated to the doctor in attendance, and at the same time send up specimens of the fungus in question for examination. In brief, the public should on no account buy, collect, or cook any unknown species of fungus, should be careful of any that are not absolutely fresh, and avoid any that are dirty or piled up one upon another. Unfortunately for us, the names of the fungi mentioned in the report of the Botanical Department of the University of Zürich for 1904 are given in the vernacular only. Thus it is not possible for us to know precisely what species are intended. In this country it is rare to see any fungus but the common, and the horse Mushrooms and the truffle exposed for sale in the markets. We have a recollection of having gathered "stein-pilz" in the Bernese Oberland, and of having partaken of them with gratification unalloyed by any subsequent ill-effects beyond that of an unsatisfied desire to know of what species we had partaken.

The Congo Flora.—The third part of the first volume of the "Etudes" of the lower and Central Congo—by M. De Wildeman—has lately been issued. A large number of new species has been described, and several have been figured in the form of quarto illustrations of great excellence, M. De Wildeman, whose critical notes are of much value, has been assisted by Dr. Christ, of Basle, Mr. C. B. Clarke, the late M. Pierre, and others. A complete index renders the work easily accessible

The Caucasus.—A very entertaining and instructive book, entitled *à travers la Caucase* (Paris, Fischbacher), has been published by a well-known botanist, Dr. Emile Levier. In company with M. Sommier, the author undertook a journey across the Caucasus. The account of his journey is given in the lively, unstilted form of letters addressed to friends at home. They appeal to lovers of hardy plants and botanists in particular. The trees and plants are mentioned incidentally, and we should have welcomed a complete list of them in addition to the appendix containing the names of the new species and varieties met with. A map and numerous illustrations add to the attractions of the book.

Japanese Vegetation.—Professor Miyoshi, of the Science College of the Imperial University of Tokio, has published the first portion of a series of small quarto illustrations showing a selection of those plants, wild or cultivated, and of those landscapes or garden views which represent characteristic features of the vegetation in various parts of Japan. The plates, taken from photographs, are very characteristic. In the number before us we have Prunus Mume, of which we are told in the text that there are more than 300 garden-varieties —a not very pleasing prospect for those of our successors who may be called on to identify and name these varieties. Prunus pseudo-cerasus and P. pendula follow; Magnolia Kobus is spoken of as the most showy of Japanese species. Iris lævigata, better known here as I. Kaempferi, is credited with between 300 and 400 varieties, cultivated in the Iris gardens near Tokio, and showing marvellous diversities in the size, shape, and colour of the flowers, and even of the leaves. A view in the Botanic garden at Tokio shows a lake surrounded by Pines, with rounded bushes of Enkianthus in the foreground. Fatsia japonica is the subject of another plate, its bold foliage and elegant inflorescence being well shown. Phyllostachys mitis is also illustrated, with its long, lithe branches bent down with snow. The text is in English as well as in Japanese, and gives those details which the plant-lover requires, devoid of undue technicality but accurate and "up to date," whilst reference is made to those works in which fuller descriptive details may be found. The title of the book is "Atlas of Japanese Vegetation," and it may be had from Messrs. Williams & Norgate.

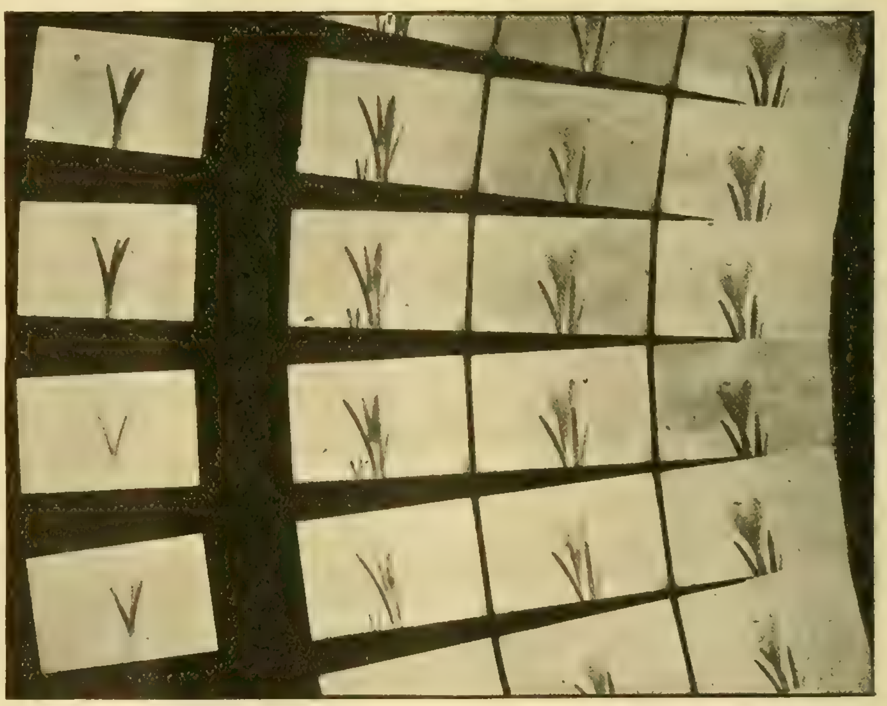

Fig. 110.—Reproduction of photographs showing the gradual development of the plant and flower in crocus.

(For text see page 267.)

The Garden Treatment.—Experiments have recently been made by several London physicians by recommending lady patients suffering from "nerves," overwork, or anæmia the simple remedy of going in for a short course of gardening at one of the schools where instruction is given in horticulture. A physician, when interviewed by a Press representative, said: "I send many of my patients to such schools. There is a school for such patients at the Botanical Gardens, Regent's Park, and in the country there are several others—for instance, at Swanley, in Kent, Lady Warwick's school of gardening at Studley Castle, Warwickshire, and another near Dunmow, in Essex, for general horticulture. I am sending patients away regularly for courses of three or six months to these schools. The work is of a novel character, the patients are much in the open air, and among beautiful plants, shrubs, and flowers, and all these things have a distinctly soothing influence upon an exhausted nervous system." *The Therapist.*

"Country Press" Post Cards.—The *Country Press* (19, Ball Street, Kensington) have issued another series of pictorial descriptive post cards. The former set was in connection with "The Fern Paradise," and showed fronds of various British Ferns; the cards before us illustrate the leaves of British Trees and Shrubs. They are interesting and useful as showing the venation and giving the scientific as well as the popular names of 14 species. It is unfortunate that no stipules are shown, nor is the difference between the upper and lower surfaces of the various leaves at all distinct in these diagrams, and a yet further improvement would have been to indicate the hairs that are a distinct feature in some species—in the White Beam, for example. No hint as to the comparative size of the foliage is given. Apart from these details we have some 57 small pictures of leaves that should prove attractive to every tree-lover.

Publications Received.—*Agricultural Bulletin of the Straits and Federated Malay States.* Edited by H. N. Ridley, Director of Botanic Gardens. Contents: Rubber Pests, by Editor; Water and Plant Life, by S. Arden, &c.—From the U.S. Department of Agriculture. Bureau of Plant Industry. Bulletins, 90: *Miscellaneous Papers.* I. The Storage and Germination of Wild Rice, by J. Duvel; II. Crown-Gall and Hairy-root Diseases of the Apple Tree; G. Hedgcock; III. Peppermint, by Alice Henkel; IV. Poisonous Action of Johnson Grass, by A. C. Crawford.—No. 91: *Varieties of Tobacco Seed distributed in 1905-6, with Cultural Directions*, by A. D. Shamel and W. W. Cobey.—No. 93: *Control of Apple Bitter-Rot*, by W. M. Scott.—No. 100, Part I. *Cranberry Spraying Experiments in 1905*, by C. L. Shear.—No. 100, Part II. *Wrapping of Apple-Grafts and its Relation to the Crown-Gall Disease*, by Hermann Von Schrenk.—*Trädgarden.* This is an illustrated quarto periodical, published under the auspices of the Swedish Horticultural Society. The illustrations are numerous and good. Mr. Carl G. Dahl is the secretary of the editorial department.

THE MOVEMENTS OF PLANTS.

THE illustration, fig. 110, for which we are indebted to Mrs. Dukinfield Scott, is one of many similar ones exhibited at a recent meeting of the Royal Horticultural Society by that lady. The object sought is to show at once or in a short space of time movements often so gradual and occupying so long a time that they cannot, under ordinary circumstances, be continuously watched. The photographs are taken on a glass disc coated with a sensitive substance. This disc is capable of taking as many as 350 photographs. These photographs are taken in succession at frequent intervals during a long series of hours, and, when ready for use, are placed in the apparatus, when, by the aid of the lantern, a succession of images is projected on to the screen. The whole process of the growth of the Crocus, from its first appearance to the full development of the flower, is thus represented in continuous sequence in the course of two or three minutes. If automatic clockwork apparatus and artificial light could be utilised, the trouble involved of working all day and sitting up all night for, perhaps, a week in order to take the photographs, would be avoided. The movements of the sensitive plants and the "circumnutations" of climbing plants are very clearly shown in this manner, and the records thus furnished by Mrs. Scott will doubtless be very valuable when authentic and comparative records of what takes place during the growth of plants are required.

AN ERRATIC ANTHURIUM.

ONE of the most extraordinary malformations that we have ever seen in Aroids is that shown in fig. 111, wherein are depicted the spathe and spadix of Anthurium Scherzerianum. The spathe is of the ordinary conformation, being a broad, flattish leaf of a rich scarlet colour, whence the plant has derived the popular name of the Flamingo plant, or, as we once heard Bishop Wilberforce, then of Oxford, call it, the "flaming go!" The central axis or spadix is curiously contorted, dilated and divided into several branches all covered with flowers of the ordinary kind. The whole appearance is like that of a hermit-crab emerging from the shell in which, after displacing its rightful owner, it has taken up its quarters, the spathe representing the shell. On cutting the branched spadix lengthwise, and also across, we were surprised to see the inner surface of the branches covered with flowers as well as the outside. The vertical section shows in the centre the original spadix, solid at the bottom, but dividing midway into an irregular cup from whose upper margin proceed the secondary branches of varying lengths. The cross section A B shows the primary spadix in the centre, surrounded by the cup-like body. From the succulent nature of the branches and the venation we are inclined to think the appearance is due to a branching of the original spadix. The secondary branches are united at the base to form an irregular cup surrounding the primary spadix, but above are detached and separate one from the other, and, as has been said, densely covered with flowers on all sides. We are indebted to Mr. Thomas Lewis, Fair Oak House, Roath Park, Cardiff, for the opportunity of illustrating this curious specimen.

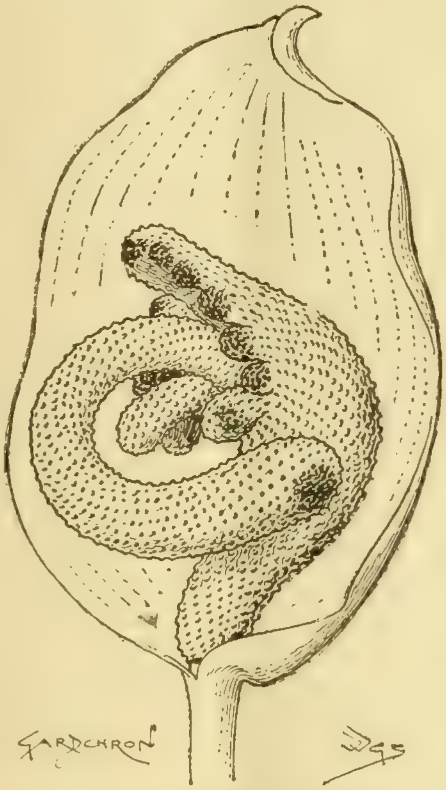

FIG. 111.—ANTHURIUM SCHERZERIANUM with flat, scarlet spathe, and a succulent, contorted, dilated, and branched spadix, covered on all sides with minute flowers.

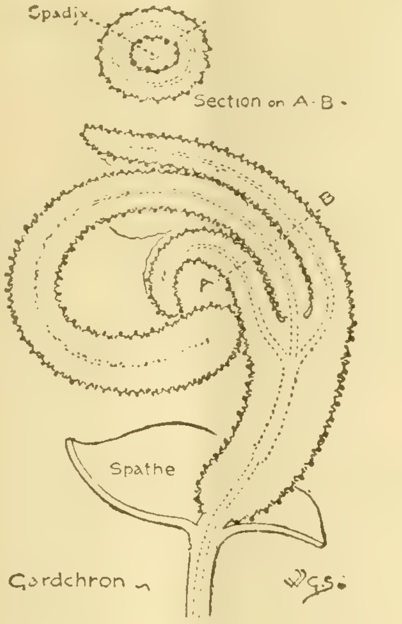

FIG. 112.

Vertical section through the contorted spadix, unbranched and cylindric at the base, but dividing above into several irregular branches, all studded with flowers. The transverse section shows the central cylindrical spadix surrounded by the tubular or cup-like base of the secondary spadix.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

PLANT DISTRIBUTION BY THE ROYAL HORTICULTURAL SOCIETY.—I have been more fortunate than some who have written on this subject, as I received most of the plants I asked for this year, and they arrived by rail in excellent condition, being very carefully packed in damp moss. In previous years I have received many good plants which were not in our collection, some were indeed small, but can one reasonably expect the Royal Horticultural Society to grow large plants, and send them to 10,000 Fellows, and exactly what each thinks fit to ask for! I am surprised that the staff succeed as well as they do in this matter. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

CALCEOLARIA MEXICANA.—This rarely cultivated annual is well worth a place in gardens, although it evidently resents cultivation and thrives much better when allowed to shed its seed and grow naturally. On a recent visit to the neighbourhood of Dolgelly, I much admired it. It was growing luxuriantly, and plants were flowering in all stages from 4 to 5 feet in height. The pale yellow flowers are contrasted with their pubescent, reddish brown calyx and the seedpods. Both sun and shade appear quite suited to the plant's requirements. The ground between rows of Dahlias was covered with masses of flowers, while a few plants had also been allowed to remain around Sweet Pea clumps, thus furnishing the bare and unsightly lower portions of the Peas. Again, at the foot of shrubs and in places where probably little or nothing else would grow, was it seen. The flowers when cut remain fresh for a long time in water. I have some sprays which have already been cut 16 days and are now quite fresh and with flowers still expanding. *F. G. Brewer, Bryntirion Gardens, Bont-ddu, Dolgelly, Merioneth.*

SUPPORTING STRAWBERRIES. — Will any grower of Strawberries tell me if it is undesirable to let the flowering trusses hang over a small raised wire hoop round the plant so as to avoid the necessity of straw? I am told that the fruit will not grow so fine if suspended instead of lying down. Is this statement correct? *George Henslow, Leamington.*

SEEDING OF ASPIDISTRA.—The Aspidistra referred to by Mr Schneider at p. 251 has probably been fertilised by slugs. There is an interesting article by Dr. Wilson in the *Transactions of the Botanical Society of Edinburgh*, Vol. XVII., part iii., p. 495, on "The Fertilisation of Aspidistra elatior by Slugs." *R. Lindsay.*

FUNGUS ON ROOTS.—During the season 1903 we had a young vine of Muscat of Alexandria which shanked badly, in fact, so much so that the bunches were reduced to mere skeletons, and this was chiefly attributed to the presence of fungus on the roots. This fungus, wherever it prevails to any extent, is very prejudicial to the well-being of the trees, which it attacks. I believe it is possible for it to exist, and do considerable injury to vines and other plants without being suspected; the fact of its being under the soil rendering it a very insidious pest. I have known several cases of vines doing badly or indifferently, for reasons which were not at all apparent, but which I now think may have been due to this cause, judging from the experience I have had of it during the last few years amongst fruit trees generally. I have found its deleterious effects on Peach, Nectarine, Fig, Plum, Pear and Apple trees. Its mode of action appears to be to attack the surface roots chiefly, the mycelium of the fungus spreading through the soil and fastening on the roots. In some instances the trees continue making young roots from the main ones, which grow a few inches and then die, being closely followed by others which meet a similar fate. Such a tree on being taken up may present an unusual number of fibrous roots, which appear at first sight to be alive, but on examination are found to be mostly dead. As the surface roots cannot in such a case act properly, the result is unfruitfulness, or indifferent fruit; at the same time the tree may have the appearance of perfect health as regards its wood and leaf growth, as the roots, whose function it is to sustain these latter, strike down deeper into the soil, and thus get away from the enemy. If from any cause these roots cannot do this, then it is a struggle between them and the parasite, the trees usually assuming an unhealthy appearance, sometimes dying outright. In casting about for some means whereby to minimise the evil in the case of the vine referred to above, I was advised by the Scientific Committee of the Royal Horticultural Society to take up the roots, wash them, and re-plant them in fresh soil. I conceived the idea of taking the stem through the hole of a large flower-pot, stood up clear of the border and filled with soil, for the vine to root in. The new roots I considered would be equivalent to surface roots, and take the place of the injured ones in the border. The result was a complete success, shanking being practically eliminated. The following winter the soil was taken out of the pot, and replaced by fresh, the roots being shaved back close to the stem of the vine, so that an entirely new set should be produced, to assist in the maturation of last year's crop, when the same gratifying results were experienced, as with the Grapes of the previous season. *R. W. Dean.*

Natural Selection.—It seems to me that Mr. Druery and I are now only at issue with regard to Darwin's meaning of "injurious variations" of structure. He says: "If such a variation as described (dwarf Ferns) is not injurious, inadaptive, or unfavourable, I should like to know what is." So should I, if they existed; but they are purely imaginary, as I understand Darwin. I take him to mean some variations of structure, induced to arise by a changed environment, which are actually *harmful to the plant itself*—i.e., it would die, even if there were no other plant near it, and no struggle for existence. Darwin gives no example, real or imaginary, to illustrate his words (*Origin*, etc., 6th ed., p. 63), but I gather this to be his meaning from other passages, and especially from his simile of the house. We have seen how the "noble and commodious edifice" was supposed to be built of "selected" but "accidentally shaped" stones; but Darwin does not describe the house built of stones without selection, which would represent an individual seedling-plant having "injurious variations." Let me attempt to complete the parallel. Suppose a jerry-builder comes along; he does not select his stones, but builds the walls with any pieces picked up at random, just as can be done up to, say, 4 feet in height, as may be seen in any stone country, as Derbyshire. He now has to continue the walls, perhaps to ten times that height, leaving spaces for doors and windows. The walls soon acquire an unstable equilibrium, the weight increases, dislocations begin, and down comes the house, like one made of cards. The shapeless stones were a source of "injury" to the house. The use of concrete or mortar is excluded, as being designed and prepared material. Darwin omits them. Now, let us imagine a plant to correspond with this. If, in my experiment, some of the seedlings of the Water Crowfoot produced leaves identical with the submerged ones of its parent, from some inability to adapt itself to air, the plant would have perished; or, if it produced leaves of some different ("indefinite" kind, is Darwin's word), but still quite inadapted to air, it would have perished; but *nothing of the kind occurred.* What, then, would Darwin say about Mr. Druery's dwarf Ferns? They fall under his category of "fortuitous destruction" (*Origin*, etc., p. 68). A number of my seedlings suffered in the same way, being smothered by bigger plants, though perfectly adapted to survive in air, had they been isolated. It was unfortunate for the dwarfs that more robust plants happened to be near them. It was simply ill-luck. If mere size is to determine what is injurious and what not, where is one to draw the line? I am sorry I misunderstood Mr. Druery's meaning about the dwarf, and also regret to think he could imagine that I "challenged" him, for such would seem to imply that I doubted his word! I was anxious for a "case," and am much obliged to him for his courtesy in supplying me with an excellent one. With regard to the origin of dwarf plants, Mr. Druery appears to think it is "indubitably (?) not due to starvation." I have discussed the "Origin of Nanism" in my *Origin of Plant Structures* (1895, pp. 6, 96), where the opposite view is maintained by several botanists. Other causes besides insufficiency of nutriment can bring about an arrest of growth, without injuring the vital functions of a plant; but dwarfs may be sterile, as well as perfectly fertile. Ranunculus sceleratus will grow to 4 feet in height in a ditch, but I found a dwarf race, the tallest specimen being about three inches in height. They were growing in dried-up Nile mud within a hundred yards of the Great Pyramid. Prof. Sickenburger, of Cairo, told me he had known them for a long time. I am inclined to be "dogmatic" again, and say that their dwarf size was "indubitably" due to lack of water and impoverishment! I do not know if I have at last satisfied my friend, but, if not, I think Mr. Druery and I must "agree to differ." *George Henslow.* [This discussion must now be closed.—Ed.]

Cassiope hypnoides.—I was much interested in the article and illustration of this plant on p. 226, as I think it is a division of plants I have had growing here in the open since the year 1899, when I brought them from Norway. My reason for writing is to advise any growers of Alpine plants living at a high elevation like myself, viz., 600 feet, not to despair of growing this plant in the open, and that without taking the trouble of artificial watering, as I have grown it successfully and flowered it annually in ordinary flat pockets of a rockery on ground level facing the north, and I have never watered it, because the dew that falls here in summer has evidently supplied the necessary moisture. My specimens do not, however, flower so freely as the plant in your illustration, which I understand has had frame treatment. *Alec. Cowan, Valleyfield, Penicuick, Midlothian.*

Beautifying Frequented Woodland Walks and Drives.—The season is approaching when numerous kinds and varieties of spring-flowering plants must be removed from their beds in the flower garden to make room for their summer occupants. One cannot help thinking of the many winding shrubbery walks and woodland carriage drives that might be rendered beautiful by the transplanting of masses of these uprooted spring-flowering plants, instead of consigning them to the rubbish heap, as is too frequently the case. Masses of dark and golden Wallflower, Myosotis grandiflora (Forget-me-Nots), Primroses, Aubrietias, London Pride (Saxifraga umbrosa), Daffodils, Snowdrops, Scillas, Violets, Silene pendula, Arabis, Alyssum saxatile, Gentians, Violas, and such-like subjects are all suitable for this purpose. In order to give the above-mentioned plants an opportunity of growing and showing off to the best advantage, the ground, where necessary, should be prepared for their reception. The expense thus incurred would be trifling, and the results would amply repay the outlay the first spring after planting. *H. W. Ward, Rayleigh.*

Packing Seeds for the Tropics.—It may not be amiss to quote the following extract on preserving seeds, from *Thomson's Gardeners' Assistant*, bearing, as it does, in a measure on the subject of this discussion. "Canvas bags, of greater or less thickness or fineness, are found to keep many kinds of seeds exceedingly well, as all the Brassica tribe, Peas, Beans, and in short most kitchen-garden seeds. For some, however, which are highly aromatic, paper is considered to be preferable, as it is closer and does not so readily permit the essential qualities of the seeds to escape by exhalation. . . . A cool temperature is best for not exciting the vegetative principle in seeds, and consequently the best for preservation; . . . near, but not lower than 40° is probably that which is most desirable, for at that temperature the water which the seeds contain is at its greatest density: lower or higher it expands, and by expansion the organs of the seed must be more or less disturbed. It should be possible to exclude the air from the seed-room when too cold and too warm, and if the internal air be too damp the first opportunity should be taken to induce a free circulation of air when it is in a dry state. . . . . Seeds closely packed in dry soil, and consequently almost excluded from the air, retain their powers of vegetation much better than those that are hermetically sealed in glass bottles or jars. In the latter case, the air in the jar or bottle must become contaminated by the exhalation from the seeds, and more or less saturated with the moisture that they contain. The consequence is, that the seeds are then in an impure, damp, and close atmosphere, and in most cases become completely spoiled." Now, what gardener would care to keep his kitchen-garden and flower-garden seeds, even for a few days, in the moist atmosphere and high temperature of a plant stove, the nearest approach we have to the conditions prevailing in tropical countries? And it is under these conditions, more or less, that seeds travel in less than a fortnight's time after leaving this country on their way to tropical countries? It is not surprising therefore that under ordinary circumstances seeds from temporate countries lose their vitality after a time, but as a matter of fact some seeds keep good longer than might be expected. I have seen Lettuce seed which had been packed in paper keeping good for successional sowings a considerable time. My experience with seed-sowing in the tropics was confined to those packed in paper and canvas bags, and when they were attended to and put in the ground immediately on their arrival they germinated freely enough. But even in this country it is not an unusual occurrence to have failures with some seed, and that may be due to a variety of causes, such as a bad harvesting season and obtaining them from an irresponsible source. It may be that in some cases the failure of seeds to germinate in the tropics might be traced to other causes than the material they are packed in. Sometimes they are too old before they reach their destination in far off countries and the right season for planting comes round, even should they be up to a normal standard of perfection, which it is to be suspected is not always the case. In conclusion, my advice to planters and garden lovers in the tropics is to order their seeds as often as they require them and sow immediately on their arrival. With regard to the power of seeds specially protected, as they are by some firms, to withstand the effects of a hot climate, I do not claim to have any acquaintance, but it cannot be doubted that those who take the extra precautions do so in the light of years of accumulated experience. *M. McN.*

Ramie Fibre.—One of the most interesting features of the second spring show, held at the Royal Botanic Society's Gardens, Regent's Park, was the exhibit of Ramie (Urtica or Boehmeria nivea). This is a plant of the Nettle family. It has large leaves of a velvety texture, covered on the underside with soft white hairs. The special feature of this plant is its commercial value. From the long upright stems is prepared an excellent fibre, which is the useful ramie. The exhibit was a very complete one, showing all stages of preparation from the natural growing plant to the beautiful white, silky fibre. Various articles made of this fibre were also shown. There was a white waistcoat made of ramie which, although it had been in use for twelve years, being washed many times, looked as good as new. A khaki tunic, used in South Africa, made of ramie had outworn three ordinary cotton tunics. It can be used with the utmost success in the manufacture of almost every article of clothing. It is in great demand at the present time for the making of incandescent gas mantles. There is a growing demand which would increase by leaps and bounds if manufacturers could only be assured that the supply would be equal to the demand. Germany alone uses annually 150,000,000 ramie-made gas mantles. The fibre fetches to-day £32 per ton, but it can be bought as low as £18. The natives of Asiatic countries are satisfied and realise a profit on £10. The highest figure paid per ton was £40. A planter who lays down ramie has a lasting crop, and has nothing to do but weed, mulch and gather. The plantation continues to yield a regular crop for 16 or 18 years. Unlike cotton, it is not subject to failure. A neglected plantation does not, of course, yield so successful a crop as one that has received attention and care. A great point in favour of the cultivation of ramie is that it is not subject to the ravages of the white ant and locust (disadvantages which again attend the growth of cotton). The Chinese grow the fibre as a rule in small patches. It is very easily cultivated thus, and grows to a height of 5 or 6 feet or more. As the stems arrive at maturity they are cut down to the root. They are then stripped by hand, the ribbons being passed through the thumb and forefinger, to which is attached a hard substance; this removes the skin and the resinous material. The fibre is then rinsed in water and hung up to dry, and in this rough state is imported. It would be more satisfactory if the cleaning process were finished at the place of growth, as the gummy matter that is left solidifies, and is difficult to remove. It also in some cases discolours the fibre. At the present time there exists no really satisfactory decorticating machine, and consequently most of the work has to be done by hand. There is no doubt that in a short time, as the supply of ramie increases and more industries are formed, improved machinery will be forthcoming. The construction of large mills rests entirely with the planters; for the latter must be fully able to supply the large and continuous quantities demanded. Mr. Edwards Radclyffe, of Staines, Middlesex, is desirous of starting a ramie growing association, and would be pleased to receive applications for membership. *G. W. Dickson.* [Former attempts in this direction have, we believe, not been commercially successful.—Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

April 17.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Dr. M. C. Cooke, M.A.; Professor Boulger, Messrs. Saunders, Cuthbertson, Bowles, Massee, Hooper, and Chittenden (hon. sec.).

Roots of Gardenia Dying.—Roots of Gardenia in a dying condition were received, and were referred to Mr. Saunders for further examination.

Auriculas and Inheritance of Characters.—Mr. Douglas drew attention to some show Auriculas, pointing out the characters that the florist aimed at procuring. He also showed a truss of flowers, all except one of which were self-red, the exception being a yellow flower. By raising seeds from red flowers crossed by red a large number of yellows are produced, while if two show flowers with dark ground are crossed, usually light coloured flowers are found in the seedlings.

Destruction of Wild Flowers.—A letter on this subject was read from Miss Trower, who remarked on the wholesale destruction of such plants as Primroses and other wild flowers by hawkers and by visitors to the country. Mr. Boulger said that there might possibly be some legal enactments before long upon the subject, and that the Devon County Council were endeavouring to get a bye-law, dealing with the uprooting of wild flowers, sanctioned by the Home Secretary.

Rhododendron arboreum.—Mr. Duncan Davidson sent flowers of this Himalayan species from Dingwall, where a specimen is growing in a shrubbery on strong clay at about 400 feet above sea level, and half a mile from the sea. The tree is about 20 feet to 25 feet in height, and as much through, the stem at the ground level measuring 36 inches in circumference. The tree is planted on the north side of a clump of other Rhododendrons, about 20 yards through, and is sheltered on the north by Conifers and shrubs. It usually flowers at the end of November on to the end of March or beginning of April.

Narcissus with leafy spathe.—Mr. Jenkins, of Hampton Hill, sent a specimen of Narcissus Princeps in which the usually membranous spathe had become leafy, and was hooded in shape at the apex. As Mr. Jenkins remarked, the corona had suffered in making its escape from the sheath, being considerably contracted on one side.

Ochna multiflora.—Dr. Masters drew attention to this plant exhibited by Mr. Chas. Turner, of the Royal Nurseries, Slough, which had received a first class certificate in 1879, but was little seen in gardens. The main peculiarity lay in the fruit. The flower is somewhat inconspicuous, but as the fruit ripens the calyx becomes enlarged and bright red, and the receptacle also becomes red and very fleshy.

Botanical Certificates.—Some discussion took place as to the points that should be considered in awarding a plant a botanical certificate, Dr. Masters bringing forward some suggestions on the subject, which were commented upon by the members present. Letters were read from Mr. Worsdell and Mr. Odell on the matter, and it was agreed to bring the matter up again at the next meeting.

NATIONAL AURICULA & PRIMULA (SOUTHERN SECTION).*

When it became necessary to select a date for this society's exhibition two only were available, viz., April 17 or May 1, and as April 20 is about the recognised date for London the 17th was selected, but owing to the very cold weather in March and part of April there was a fear that it would be a poor show; but once again the prophets of evil were wrong, and the show was well up in quality to that of any previous one.

There has been very little alteration in the schedule of prizes since the society was inaugurated in 1876, until this year. In previous years there used to be a class for 50 Auriculas (to show any kind of Auricula); the show and Alpine varieties were mixed together sometimes, which was not entirely satisfactory. This hybrid class has been eliminated, and in lieu thereof two classes have been introduced, 24 show Auriculas and 24 Alpine Auriculas; this arrangement worked well, and was certainly an improvement. The competition was very keen in both classes, and some very fine varieties were exhibited. Taking the show class first, we found the newest and the very old varieties competing for a place, but it is easy to be seen that the older ones are rapidly giving way before the new varieties. Lovely Ann was exhibited in one collection, but Booth's Freedom and Page's Champion, which were exhibited at the early shows, have quite disappeared, but even they could not compare with such fine green edges as Mrs. Henwood, Abbé Liszt, Shirley Hibberd, and a new one named Henry Wilson, which has a very correct green edge, but, as shown, wanting in body colour. Other good green edges were James Hannaford, sometimes good; Rev. Francis D. Horner, an old favourite; Gladiator is good sometimes, but it was not well shown—the paste being defective. Abraham Barker is excellent, but it is often between a green and a grey edge. Diomed is a true and good green, better than Gladiator. One or two seedling green-edged varieties were exhibited, but they are not in commerce, and may not hold to their maiden promise.

The grey-edged is a stronger class, and some handsome varieties were exhibited in the various classes. George Lightbody, the oldest of them, is still one of the best; it was well shown. Olympus, a very true grey edge as it was shown by Mr. Cranfield. George Rudd, a good grey, was not in its best form. Richard Headley was well shown by Mr. John T. Bennett-Poe; not such a handsome plant has been seen in London since the late Rev. Frederick Tymons brought over two plants from Ireland about 20 years ago or more. William Brockbank was in poor form, having too much body colour. Colonel Champneys was very showy, but is not a show flower; we want a grey edge of merit with the violet body colour of Colonel Champneys; but although it is the best seeder of all the show Auriculas, it is not a good parent. Dinham was good this year. Perseverance was well shown, but it is seldom in good form. Lancashire Hero was good in one collection, and Marmion, though it lacks ground colour, was very correct.

The white edged was well represented. Acme was one of the best, and shown in most collections. Conservative was in good form; in its maiden state it won "Premier." Dr. Kidd not in good form. Mrs. Dodwell, with only two pips, did not improve the collection in which it was placed. The Miller (new) was very neat, and has a true white edge; it is promising. One plant of Magpie was shown, not so good as usual, being rough on the edge. This is generally fine, and has been in existence 20 years; it is one of the Rev. F. D. Horner's productions; but, like many other fine show Auriculas, it is slow to get outside the collection at Low Fields.

In self edges Favourite seems to be an improvement on Mrs. Potts; they are both good violet selfs. Mrs. Phillips and Mrs. Barnett are both good maroon selfs evidently from the same parents; Cleopatra is a well-formed flower, but was not at its best. Ruby and Lord of Lorne, both red selfs, were the best in this colour. Gerald and Heroine were the best of the older maroon colour.

ALPINE AURICULAS.

The Alpine Auriculas made a brilliant display. The improvement in this class has been very marked in recent years; it seems more amenable to improvement, and it is rather curious that the Standard of Excellence set up by the florists should insist on the shaded edge for Alpine Auriculas, and that the self edge in show Auriculas should not be shaded; again, an Alpine Auricula must have no farina on the centre disc, whereas the centre of a show Auricula must be heavily mealed, indeed, a choice Alpine Auricula has no farina or "meal" either on leaf or flower. The finest gold centred Alpine Auricula in the exhibition was Majestic; it is of excellent form in truss and flower, the centre clear yellow, the margin maroon crimson, shading off to the edge of a paler tint. The best white centred variety was Teviotdale; the centre is white, the margin deep purple, shading off to a paler purple. Amongst gold centred varieties were Duke of York, large truss and flowers brilliant; Firefly, very bright crimson and gold, golden disc, rich gold centre, shaded bright red margin; J. F. Kew, General Buller, Flora Mc Ivor, Mrs. Markham, and Mrs. Martin Smith. There were not nearly so many good varieties in the white ground class, but considerable improvement has been made during the last decade. Teviotdale is a considerable improvement on any other in this class. Thetis has a cream centre, vigorous in growth, and flower of fine form. Blue Bell is very distinct; its shading most pronounced. Amongst older white ground varieties, Mrs. Harry Turner is still good; Melaine and Elegant are also distinct and pretty.

The competition in these Alpine classes used to be confined to a few amateurs; now the competitors are numerous and widely spread over the southern counties.

The Polyanthuses were well represented, and also the collections of Primulas. The committee of the society awarded First Class Certificates to Mr. Jas. Douglas for a maroon self Auricula, "Zarnia," to Mr. C. Henmall for Paul Henmall crimson self, and to Phillips & Taylor for their Alpine Majestic; this also was the Premier Alpine. Messrs. Phillips had the Premier award also for Mrs. Henwood.

The Medals given by Mr. J. Douglas were awarded as follows:—Silver Gilt to Messrs. Phillips & Taylor, Silver to F. A. Price, Beckenham, Kent, and Bronze to **Mr. C.** G. Butler for six seedling Alpines.

ROYAL BOTANIC.

April 18.—A bright show was made in the corridor and conservatory at Regent's Park, on Wednesday, the 18th inst. The exhibits, excepting the Orchids, Amaryllids, Auriculas, and some other plants which were not represented on this occasion, were so similar to those exhibited on the previous day at the R.H.S., that only a brief notice is requisite.

Messrs. W. Paul & Son, of Waltham Cross, Herts, contributed a nice group of hardy flowering shrubs and Roses. Of the latter, Elaine (hybrid Tea), white, round, full flowers, with a faint blush tint; Crépuscule (noisette), bright amber flowers, tall, branching plant, with clear amber flowers from the lateral branches; Warrior (H.T.) was well shown; also Trier, a pure white flower of the Rambler type, and Wedding Bells, a pink rambler, with semi-double flowers. A Juliet (Tea), with amber base to petals, shading off to pink. (Silver medal.)

Messrs. R. & G. Cuthbert, Southgate, put up a large group of flowering plants, Azalea mollis varieties being the chief feature. J. C. Van Thol, Dr. Reichenbach, Emil Leibeg were good. Weigela Eva Rathke, Spiræa confusa, Lilacs in fine double varieties, Cytisus præcox alba, and other showy things. (Gold medal.)

Mr. S. Mortimer, Farnham, contributed a fine bank of Polyanthus and American Carnations. Of the latter, Halowarden, The Belle, Nelson Fisher, and Flamingo were good. (Silver medal.)

Messrs. J. Peed & Son, West Norwood, staged a neat group of rock plants, and various subjects, Orobus vernus, Scillas, Primulas, etc., were attractive. (Silver medal.)

Mr. T. R. Russell, Richmond, exhibited a group of Clematis; of sorts worthy of special note were Lucie Lemoine, Purpurea elegans, Ville de Lyon, King Edward VII., Mrs. Geo. Jackman, etc. (Silver medal.)

E. Wagg, Esq. (gr. Mr. D. Phillips), The Islet, Maidenhead, contributed a fine group of Cinerarias; the foreground consisted of specimens of the finest florist type, backed up with stellata varieties. (Gold medal.)

Messrs. Cutbush & Sons, Highgate, put up a large rockery; with a basin of aquatics in the centre, hardy Orchids, Gentians, Trollius, etc., made a nice show. (Gold medal.)

Messrs. Hogg & Robertson, Dublin, contributed a large collection of Narcissi, among which Lady Gore Booth, Lady Arnott, Mrs. F. W. Moore, Brigadier, and others were good. (Large Silver medal.)

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* See also brief report in last issue.

Messrs. R. H. Bath, Ltd., Wisbech, staged a fine collection of Narcissi. King's Norton, Glory of Nordwijk, Eyebright (a fine poeticus variety), and Marie Hall, were worthy of special note. (Large Silver-gilt medal.)

Messrs. Barr & Sons also put up a choice collection, including several new varieties; Agnes Harvey, a pure white Leedsii, which gained an award of merit; odorus rugulosus maximus, Pearl of Kent, the large trumpet white White Swan, Snowdon, Royal Star, and other new sorts were included. (Silver-gilt medal.)

H. R. Darlington, Esq., Park House, Potter's Bar (gr. Mr. D. Bignell), contributed a collection of about 70 varieties, including many of the newer sorts. (Large Silver medal.) Owing to there being only one exhibit the Barr Medal was not awarded.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

April 5.—There was a good show of plants at the meeting held on this date, several meritorious groups being staged.

R. Le Doux, Esq., West Derby (gr. Mr. Davenport), showed a group of about 20 specimen plants, including Dendrobiums, Odontoglossums, Lycastes and Oncidiums. The most striking plant of the group was a well-cultivated Dendrobium Brymerianum, full of bloom. A Cultural Certificate and a Silver Gilt Medal were awarded to this group.

Philip Smith, Esq., Ashton-on-Mersey (gr. Mr. Kitchen), also staged a good group of plants of varied character; several good Dendrobiums were noticeable. (Silver Medal.)

Messrs. James Cypher & Sons, Cheltenham, contributed a display for which a Silver Medal was awarded.

J. W. Moore, Ltd., Bradford, obtained a Bronze Medal for a group in which were included Odontoglossums. A large hybrid Cypripedium, called C. × Bridgeii. var. magnifica, was the best flower in the group.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), sent four good Odontoglossums, two of which received awards.

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), exhibited Lælia × purpurata Digbyana, "Harefield Hall variety."

Messrs. H. Low & Co., Enfield, exhibited Odontoglossum crispum, var. "Jeanette," and O. c. var. "xanthotes," Low's variety.

A. J. Keeling & Sons, Bradford, received a vote of thanks for a small group of mixed Orchids.

First-Class Certificate.

This was awarded to Cypripedum × Bridgeii, var. magnifica, shown by J. W. Moore, Ltd.

Awards of Merit.

Awards of Merit were granted to Odontoglossum crispum, var. Starlight, "Gratrix's variety," O. × ardentissimum, var. "Princess Ena," both from S. Gratrix, Esq.; Cattleya Trianæ, var. Juno, from Messrs. J. Cypher & Sons, and Dendrobium × Cybele, Mitchell's var., from E. Mitchell, Esq. *P. W.*

MIDLAND DAFFODIL.

April 25, 26.—The eighth annual show under the auspices of this Society was opened on Wednesday last in the Exhibition Hall, Botanical Gardens, Birmingham. The date was rather a late one, and possibly a few days too late to have a perfect exhibition, but visitors from the south were surprised to find that Midland blooms were so late as they were, and the show suffered much less from the late date than was thought to be probable beforehand. The weakest group was the Trumpet or Magni coronati section, the flowers of which pass over earlier than those in the other groups. The Narcissus flowers, with Tulips, and a large number of non-competitive exhibits of varied character made an attractive display, and in some cases the Narcissus flowers were of quite exceptional merit, especially those shown by Mr. Crosfield, Mrs. Berkeley and Mr. Wilson. Of the new varieties five gained Awards of Merit and one a First-Class Certificate.

The show was formally opened by the Countess of Dartmouth, and it was visited by a large number of people, among those expected being the Rt. Hon. Joseph Chamberlain, M.P. There were numerous visitors from London and the southern counties.

Mixed Class.

The most important class was one for a collection of fifty varieties, to represent each of the three groups Magni coronati, Medio coronati and Parvi coronati, but excluding Polyanthus Narcissus. There were as many as five exhibits, and the first prize was awarded to a collection from Mr. E. M. Crosfield, Little Acton, Wrexham. Several seedlings were included such as Banzai, the extremely large sulphur-coloured Trumpet variety exhibited last season. Mrs. Ernest Crosfield, another large Trumpet flower, but having a rather smaller-sized perianth, and less frilled, more funnel-shaped trumpet than in the case of Banzai. Indamora, also a Trumpet variety, was a fine novelty. Most of the remaining flowers were of known varieties, and their merit consisted in the excellent culture they exhibited. Messrs. Pope & Son, King's Norton and Birmingham, were second with a collection showing considerable merit, and Mr. A. S. Leslie Melville, Branston Hall, Lincoln, third.

Ajax or Trumpet Daffodils.

Mr. R. C. Cartwright, King's Norton, won the first prize in the class for twelve distinct varieties, showing Glory of Leiden, Madame de Graaff, Emperor, Empress, M. J. Berkeley, Grandis, Victoria, Mrs. Camm, Captain Nelson, Mrs. W. T. Ware, J. B. M. Camm, and Madame Plemp. As many as five prizes were awarded in this class; those of the second and third degree being obtained by Messrs. F. Impey & Son, Midland Spring Gardens, Northfield, and Messrs. Pope & Son, King's Norton, respectively.

In the class for six varieties, those in the winning collection from Mr. W. A. Watts, St. Asaph, were P. R. Barr, Emperor, Mrs. Walter Ware, Madame de Graaff, Empress and Grandis; Mr. S. S. Jones, Prees, won second prize, and included five good flowers of Glory of Leiden.

Incomparabilis or Cup Daffodils.

Mr. A. M. Wilson won the first prize in the largest class for twelve varieties, his selections being as follow:—White Lady, Orangeman, Waterwitch, Barri conspicuus, Gloria Mundi, Minnie Hume, Crown Prince, Katherine Spurrell, Easter, Branston, White Slave, and Castile. This collection was very pretty indeed, the varieties Orangeman, Minnie Hume, and Barri conspicuus being excellent. Second, Mr. A. S. Leslie Melville, Branston Hall, Lincoln, who was followed by Messrs. Pope & Son.

In the class for six varieties, those which gained the first prize for Mr. C. L. Branson, Coleshill Park Gardens, Coleshill, were Barri conspicuus, Stella superba, Mrs. Langtry, Cynosure, Nelson's Major, and Flora Wilson. The second prize was awarded to Mr. S. S. Jones, Prees, whose collection included F. Miles and George Nicholson; third, Mr. Gumbleton, Twyning Manor, Tewkesbury.

Poeticus or Flat-Crowned Daffodils.

In the class for six distinct varieties the winning collection from Mr. A. M. Wilson, East Keal, Spilsby, contained the varieties Blood Orange, Firebrand, Gleam, Beacon, Sequin, and Concord. In all but the variety Sequin the crowns had rich orange colour in more or less degree. Second, Mr. A. S. Leslie Melville, Branston Hall, Lincoln; and third, Mr. R. E. Cartwright.

The best collection of six varieties of true "Poeticus" Narcissus was exceedingly interesting, since some of the many good varieties raised by Mr. Engleheart have come into commerce. Mr. A. M. Wilson, East Keal, obtained the first prize for the following selection:—Juliet, Chaucer, Virgil, Homer, Horace, and Almira. These flowers run very near to each other in general appearance, Virgil being one of the best. Second, Mr. F. Herbert Chapman, Guldeford Lodge, Rye; and Messrs. Pope & Son obtained third prize.

Orange-Coloured Varieties.

Narcissus having orange-coloured cups or crowns are much more plentiful than formerly, and it is an easy matter to select a dozen of these varieties. Those contained in the stand which was awarded the first prize were as follow:—Lobster, Blood Orange, Gloria Mundi, Albatross, Mars, Branston, Flamingo, Lucifer, Mabel Cowan, Crown Prince, Lulworth, and Maurice de Vilmorin. Second, Messrs. Pope & Son, who had good flowers of Will Scarlet, Orangeman, and Ida Pope; third, Mr. R. C. Cartwright.

In the class in which the selection was limited to six varieties, those following were exhibited in the collection from Mr. W. A. Watts, St. Asaph, which was awarded the first prize:—Beauty, Barri conspicuus, Crown Prince, Ornatus, Poetarum, and Flora Wilson. Mr. S. Jones obtained second prize in this class.

Single Blooms.

There were classes for the best single bloom in each of the four groups, and the winning varieties were as follow:—Magni coronati, "Evadne"; Medio coronati, "Homespun"; Parvi coronati, "Concord"; and true Poeticus type "Epic." The variety Concord is very remarkable for its good form, the symmetry being perfect.

Inexpensive Daffodils.

Varieties that may be purchased at ten shillings a dozen or less were found in a class for 12 distinct varieties. Those which obtained first prize for Mr. Jno. Sceaney were as follows:—Emperor, Empress, Victoria, Mrs. Langtry, C. J. Backhouse, Minnie Hume, King Edward VII., Flora Wilson, Beauty, Grandee, Barri conspicuus, and Albicans.

In the more restricted class, with the same limitation as to cost as in the previous class, the first prize collection included the varieties Emperor, Cynosure, Ornatus, Grandee, Flora Wilson, and Mrs. Langtry.

A class was arranged for varieties costing not more than five shillings per dozen, and Mr. C. W. Smallwood, Tullamaine, Solihull, obtained first prize for the varieties Glory of Leiden, Grandis, Barri conspicuus, Katherine Spurrell, Ornatus, and Vanessa.

Messrs. Pope and Son offered five prizes for collections of six varieties of Narcissus, none of which cost more than three shillings per dozen. Those in the first prize collection from Mr. Jno. Sceaney, 30, Nursery Road, Harborne, were Emperor, Victoria, Ornatus, Mrs. Langtry, Empress, and Barri conspicuus.

Seedlings and New Varieties.

In the following classes prizes were offered for new varieties. The largest class called for 12 varieties which have not been in commerce for as long a period as four years. The first prize for these was won by E. M. Crosfield, Esq., Little Acton, Wrexham, who had, in addition to two varieties described below as gaining Awards of Merit, the following flowers:—Chapeau, Herod, Broadwing, Rosalind, Sceptre, Countess of Stamford, Dairy Maid, Ethelbert, Fire Clay, and Adonis.

The varieties in the first prize exhibit of Parvi Coronati seedlings were Pilgrim, Mercury and Ruby, from Mr. C. H. Cave, Rodway Hill House, Mangotsfield, near Bristol. Pilgrim is one of true Poeticus type; Mercury has a large, sulphur-coloured perianth and spreading, yellow crown; but Ruby has a pure white perianth, of true Poeticus type, with a spreading crown, wholly of rich orange-red colour—a very fine flower. There were pretty varieties in the other exhibits, particularly Ceres in the second prize collection, being pure white in the perianth with a lemon shade of yellow in the crown, which is spreading.

In the Medio Coronati section the three best seedlings were Rufus, with white perianth, and most vivid orange-coloured cup; Milkmaid, sulphur-white entirely; and Imari, with perianth sulphur-white and cup with orange-coloured margin, and shading of yellow in the interior.

In the Magni Coronati section the first prize was awarded to the seedlings named as follows: Iceberg, a sulphur-yellow coloured self; Hebe, having pale sulphur-coloured perianth and deeper coloured trumpet; and Semiramis, of the same shades as the flower just described, but having a frilled trumpet.

AWARDS.

Narcissus "Erda."—A flower of large size, good form, belonging to the Parvi Coronati group. Colour of perianth sulphur; crown, which is spreading, red, with orange further from margin. Shown by E. M. Crosfield, Esq. (Award of Merit.)

N. "Fiona."—A large trumpet Daffodil, with perianth of very pale sulphur colour, and long, shapely trumpet, with frill of deeper shade than perianth. Shown by E. M. CROSFIELD, Esq. (Award of Merit.)

N. Red Ensign.—A Parvi Coronati variety, with white, or extremely pale sulphur, perianth, with imbricate segments, and flat, somewhat spreading, orange-coloured crown. From Messrs. J. R. PEARSON & SONS. (Award of Merit.)

N. Mrs. Ernest Crosfield.—A large Ajax or trumpet Daffodil, nearly white, with very pale sulphur-coloured trumpet. The perianth-segments incurve, and the long trumpet has a broad and crimped frill. From E. M. CROSFIELD, Esq. (First Class Certificate.)

N. Masterpiece.—A very finely-formed circular flower, of moderate size, and belonging to the Parvi Coronati group. Perianth white, or pale sulphur, and the spreading crown of unusually deep orange colour. From Messrs. BARR & SONS. (Award of Merit.)

N. Easter.—An incomparabilis or Medio Coronati flower, with white perianth of very good form, and clear yellow cup, also of perfect form. Shown by Mr. A. M. WILSON. (Award of Merit.)

MISCELLANEOUS CLASSES.

The best collection of four varieties of double Daffodils contained Primrose Phœnix, Sulphur Phœnix (also known as Codlings and Cream), Orange Phœnix (Eggs and Bacon), and Butter and Eggs. The exhibit was from Mr. W. A. WATTS.

The best six pots of Polyanthus Narcissus were shown by Mr. R. C. CARTWRIGHT, King's Norton, Mrs. MUSTON, 28, Cavendish Road, Edgbaston, being awarded second prize. In a class for the best collection of six pots of any varieties of Daffodils distinct, Mr. R. Usher (gr. to J. ARCHIBALD HERRICK, Esq., Harborne House, Harborne) showed J. B. Camm, Duchess of Westminster, Victoria, Mrs. Langtry, Mad. Plemp, and Emperor, for which he obtained the first prize.

Mr. R. C. CARTWRIGHT had six very pretty vases of Spanish Irises, and was awarded the first prize. Mr. CARTWRIGHT had also a first prize for a group of 12 pots of any varieties of Narcissus.

Mr. J. A. KENRICK, Barrow Court, Edgbaston, had the best collection of six pots of varieties of Tulips.

The best 12 pots of single Tulips were shown by Mr. R. C. CARTWRIGHT, his plants showing very fine development.

DECORATIVE CLASSES.

Sprays of Narcissus were arranged with much taste, and for such a purpose the Parvi Coronati and Medio Coronati flowers are preferable. The best exhibit of three sprays was adjudged to be one from Mr. S. S. JONES, Prees, Messrs. POPE & SONS, King's Norton, being awarded second prize.

There were numerous exhibits in a class for a group of cut Daffodils arranged on a round table, suitable for a drawing-room. The first prize was gained by Messrs. F. IMPEY & SONS, Northfield, and Messrs. POPE & SONS were second.

The best epergne of Daffodils was arranged by Messrs. IMPEY & SONS, the Rev. J. JACOB being second.

Messrs. IMPEY & SONS had also first prize for a basket of cut bloom, there being much competition in that class.

HONORARY EXHIBITS.

Mrs. BERKELEY, of Spetchley, Worcester, exhibited the most remarkable collection of flowers of those not entered for competition. The varieties were of the very choicest, and the flowers so fine, that in some cases better specimens have never been exhibited. Perhaps the most extraordinary were the flowers of White Queen, which showed wonderful development, but all were above average merit. Charles Wolley Dod, Cormorant, Golden Bell, Weardale Perfection, Great Warley, Earl Grey, and others represented the "trumpet" varieties, and among the "cup" Daffodils such effective varieties were staged as Will Scarlet, Occident, Lucifer, Seneschal, &c. In addition, there were Rhymester, Dante, Ben Jonson, Epic, and numerous others. A piece of silver plate was awarded for this exhibit.

Messrs. BAKER'S, Wolverhampton and Codsall, exhibited a prettily-arranged rockwork, in the form of a bank, sloping from one of the side walls near the platform. The three most prominent plants on the rockwork were Saxifraga pyramidalis, Incarvillea Delavayi, and Cypripedium spectabile, there being good groups of each of these species, in full flower. Primula cashmeriana, and other species of Primula, Aubrietias Prichard's A 1., and Dr. Mules, Fritillarias, Iris pumila aurea, and the double Welsh Poppy (Meconopsis cambrica fl. pl.) were other interesting plants in the exhibit. (Gold Medal.)

Messrs. GILBERT & SON, Anemone Nurseries, Bourne, Lincolnshire, had flowers of the double Anemone "King of Scarlets," and the bright variety of A. fulgens known as Scarlet Windflower, also of the St. Brigid Anemones and a select variety of Tulips. (Silver Medal.)

Messrs. W. CUTBUSH & SONS, Highgate, London, N., and Barnet, Herts, had a group of plants in which were included "Mollis" Azaleas, Rhododendron myrtifolium, the rambler Rose, "Mrs. F. W. Flight," and the Polyantha variety Mrs. William H. Cutbush; also some Ferns and other shade-loving plants. Trillium grandiflorum and T. erythrocarpum, this latter a strong-growing plant with red markings on the segments of the flower; Pyxidanthera barbatula, a North American shade-loving plant with white flowers only half an inch high, and a number of indigenous species of Orchids were among the plants which attracted attention. (Large Silver Medal.)

Messrs. HEWITT & Co., Solihull and Birmingham, staged a fine group of mixed flowering plants, in which standard Lilacs, Laburnums, also Deutzias, Lilies, Azaleas, Roses, Weigela, and many other varieties were included. (Silver Gilt Medal.)

Messrs. RANDALL & SONS, 46, City Arcades, and Hatfield Nurseries, Shirley, Birmingham, exhibited cut flowers of tree Carnations in many of the popular varieties, the specimens being of large size and of well-developed colours. (Bronze Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, contributed one of the largest non-competitive displays of Narcissus flowers, in which the various sections were represented by numerous varieties, of which perhaps the largest trumpet section was weakest. The best yellow trumpet variety shown was King Alfred, and by its side one of the newer varieties of the "Phœnix" section, known as "Apricot" Phœnix, was very pretty. Lady Margaret Boscawen, with its very large, white perianth and yellow trumpet, was conspicuous, and there were several unnamed seedlings of promise. (Gold Medal.)

Messrs. GUNN & SONS, Olton, Birmingham, staged pot Lilacs, Spiræa media (confusa), and in front and below these a collection of Alpine and other flowering plants, arranged over Moss-covered cork in such a manner as to represent rockwork. The effect was good. (Silver Medal.)

Messrs. HOGG & ROBERTSON, 22, Mary Street, Dublin, had an exhibit of Tulip and Narcissus flowers. This firm always shows Tulips well, and on this occasion the Narcissus flowers constituted a very choice collection of the Medio Coronati section chiefly, with such trumpet sorts as Brigadier, Mme. de Graaff, Glory of Leiden, Mrs. F. W. Moore, &c. The "cup" Daffodil, Mrs. C. R. Hamilton, was very beautiful. (Silver Gilt Medal.)

Messrs. W. SIMPSON & SONS, Birmingham, contributed a group in which the flowers of selected varieties of Narcissus were relieved by the introduction of a few pots containing Narcissus plants in flower, the foliage of which had a very good effect amongst the flowers. A "pot" of Mme. de Graaff was very fine. (Silver Gilt Medal.)

A group of Tulips was staged by Mr. J. W. CROSS, Old Grammar School, Wisbech, in which many varieties were included, and the flowers were of good quality, but insufficient attention had been given to the matter of arranging them effectively. (Silver Medal.)

Messrs. J. R. PEARSON & SONS, Chilwell Nurseries, Lowdham, Notts, arranged a table very prettily with Narcissus flowers, but the Parvi Coronati and Medio Coronati section were much predominant. Of the "trumpet" section, however, there were Madame de Graaff and Glory of Leiden. Of the newer varieties, Ermine with very large white perianth and short yellow cup, Red Ensign with sulphur-coloured perianth, and brilliant orange-red-coloured corona were charming. (Large Silver Medal.)

The only Sweet Peas in the show were in a collection from Mr. ROBERT SYDENHAM, Tenby Street, Birmingham. He had about two dozen bouquets of these arranged in glasses, and representing some of the most popular varieties. In size and colour they were very good for Sweet Peas sown in pots in September. Mr. SYDENHAM had also Narcissus, Tulips, and Lily of the Valley growing and flowering well in Moss fibre, and a collection of Tulips from the open border. (Silver Gilt Medal.)

Mr. S. MORTIMER, Rowledge Nurseries, Farnham, Surrey, put up vases of American varieties of tree Carnations, the flowers being of extra fine quality. The varieties included Nelson Fisher, The Belle, Mrs. Thomas W. Lawson, Enchantress, Harry Fenn, &c. Flowers of the double Stock "All the Year Round" were powerfully fragrant and of bold habit. (Silver Medal.)

From the LABELLIFLOS NURSERIES, Voorschoten, Holland, came a collection of cut flowers of Hippeastrums, some of which were remarkable either for their coloration or unusual size. (Large Silver Medal.)

Zonal Pelargonium flowers were shown by Mr. VINCENT SLADE, Staplegrove Nurseries, Taunton, Somerset, in numerous varieties, and arranged in green stands. (Large Silver Medal.)

Several seedlings were shown by Mr. W. F. M. COPELAND, Stone, one named Chinese Gordon being remarkable for its large perianth and richly-coloured, noble-looking trumpet.

The Rev. G. H. ENGLEHEART, Dinton, Salisbury, had an exhibit, in which some very choice seedlings of the Parvi Coronati and Medio Coronati groups. The flowers were nearly all unnamed, and, therefore, we need not refer to them in detail. But one distinguished by the number "300" was very remarkable. The flowers were of large size, having a spreading white perianth and curiously-crimped crown of various shades of yellow and white, so crimped as to suggest that we may yet see "crested" Daffodils, like the crested Begonias and other flowers. "Polestar" is a very large stellate flower with flat, spreading crown of yellow. (Medal.)

Messrs. BICK BROS., Olton, Birmingham, sent a small collection of Saxifragas, Sempervivums, New Zealand Veronicas, and Auriculas.

C. WINN, Esq., Selly Hill, Birmingham, staged nine well-flowered Auriculas.

NATIONAL AURICULA AND PRIMULA (MIDLAND SECTION).

APRIL 25, 26.—The seventh annual exhibition in the Botanical Gardens, Edgbaston, was certainly one of the best exhibitions ever held by the society. The North and South met together, and the South was well to the front. The leading class (six distinct) Show Auriculas was represented by six exhibitors. Mr. JAS. DOUGLAS, of Great Bookham, Surrey, was first with refined plants of Favourite and Mikado selfs, Acme and Vesta white edges, Lapwing and Abbé Liszt green edges. W. B. CRANFIELD, Esq., Enfield, was a good second with Abbé Liszt, Shirley Hibberd, George Lightbody (this also won as the Premier flower), Acme, and George Rudd. Mr. WM. SHIPMAN third.

For four Show Auriculas Mr. DOUGLAS was again first with Mrs. Henwood, Vesta, Mrs. Phillips, and Abraham Burke. W. B. CRANFIELD was a very close second (nine exhibitors).

J. W. BENTLEY, Esq., was in the first position with a splendid pair Favourite and Shirley Hibberd (eight exhibitors).

In singles the awards were late in being put on, but Mr. CRANFIELD was first in the class for flowers of white and grey edges.

Mr. J. DOUGLAS was first and second for seedling Show Auriculas with Prince Charming and Lapwing green edges, both flowers of great refinement. These two also received First Class Certificates.

In the class for Alpine Auriculas Mr. JAS. DOUGLAS was first for six with good, well-defined trusses of Golden Disc, Ettrick (very fine, both new), Urania, Teviotdale, J. F. Kew, and Duke of York. CHARLES WINN, Esq., Selly Hill, Birmingham, was a good second. Mr. BENTLEY third (six exhibitors).

CHARLES WINN, Esq., was first for four Alpines with Thetis, Mrs. Danks, Duke of York, and Richard Dean. Mr. Douglas second. Mr. Holding, Bournville, third (nine exhibitors).

There were 10 exhibitors for two Alpines. Mr. E. Danks, of Aston, was first. Mr. Holding second, with exceedingly refined and well-developed flowers.

There were 39 exhibitors in the yellow and white ground singles, but the names of the winners were not on their cards, although space was left for this purpose.

Among what are termed maiden-growers, Mr. A. Wadley was easily first with two superb blooms, Mrs. Gorton (gold centre) and J. F. Kew (cream).

In a class for three Alpines (local growers) there were no fewer than nine exhibitors. Mr. R. Holding was easily first with Unexpected, Miss Aston, and J. F. Kew. Mr. Bentley had the best gold-laced Polyanthus in George the Fourth; and the best Polyanthus and Primroses were sent by Mr. W. M. Shipman. The Premier Alpine was J. F. Kew from Mr. E. Danks.

HUNTINGDONSHIRE DAFFODIL AND SPRING FLOWER.

April 19.—The first show in connection with the above society was held at Huntingdon on this date, and proved a great success. The competitive entries were numerous, and these were largely augmented by trade exhibits.

Messrs. Barr & Sons, King Street, Covent Garden, London, received the Society's Award of Merit for Narcissus Dr. Kennard and N. Peter Barr.

Messrs. J. R. Pearson, Lowdham, also received Awards of Merit for two Narcissi, N. Duke of Leinster and N. Florence Pearson.

Mr. J. Mallender, Worksop, gained an Award of Merit for a seedling white trumpet Daffodil of good substance, and this flower also gained first place in the competitive classes.

Messrs. R. H. Bath, Ltd., Wisbech, had a splendid exhibit of Daffodils, while Mr. J. W. Cross staged an exhibit of Tulips, Daffodils and Anemones which was much admired.

Miss Wilmott, Great Warley, staged a batch of seedling Narcissi which was a feature of the show, especially pleasing being hybrids from Queen of Spain and Triandrus.

Messrs. W. & J. Brown, Peterboro', had a display of Carnations, Roses, flowering trees, &c., while Messrs. J. E. Perkins, Huntingdon, showed Tritonias, Carnations and the new Rose "Lady Gay."

In the competitive classes Messrs. J. Mallender, H. R. Darlington, H. B. Young and Miss L. L. Linton, the energetic secretary, were conspicuous prize-winners.

All concerned may be heartily congratulated upon the result of the first show, which promises well for the future.

Obituary.

James Petrie Bisset.—This greatly esteemed gentleman died at his residence, Wynndun, Banchory-Ternan, Deeside, some eighteen miles from Aberdeen, on Tuesday, April 17, in his sixty-eighth year. Born at Inverurie, Aberdeenshire, Mr. Bisset entered the service of the North of Scotland Bank, Ltd., and later went to Shanghai, China, where in the course of time he founded the firm of Messrs. J. P. Bisset & Co. In 1876 Mr. Bisset retired from active business life, and selected Banchory as his place of residence. He acquired some distinction as a botanist, and was a specialist in the Desmideæ. In January, 1884, he read a paper before the Royal Microscopical Society on discoveries he had made in the neighbourhood of Lake Windermere in 1883. He also wrote in conjunction with the late Mr. John Roy, LL.D., Aberdeen, articles for the June and July numbers of the *Journal of Botany*, 1886, on "Notes on the Japanese Desmids." Another informative article from his pen was on Scottish Desmideæ, which appeared in the *Annals of Scottish Natural History*, 1893-94.

Jan Hendrick Kersten.—We regret to record the death of this well-known continental nurseryman, senior partner and founder of the firm of J. H. Kersten & Co., Heemstede, Holland. Deceased, who was 74 years of age, retired from active business about two years since.

Robert Kenyon.—It is in great sorrow that I write to record the death of Mr. R. Kenyon, who died on March 27. Less than a year ago he went to America to Mr. J. Ash, La Plaisance, Pomfret Centre, Connecticut, but of this gentleman or the place I have no particulars. The late Mr. Kenyon, when gardener to A. F. Hills, Esq., Monkhams, Woodford Green, Essex, was well known as a successful grower of Chrysanthemums, and he exhibited them regularly and successfully at the show of the National Chrysanthemum Society, both in the class for 60 blooms shown in vases and in that for 48 Japanese blooms distinct. Deceased was a member of the committee of the National Chrysanthemum Society. His kindly disposition endeared him to all. He was possessed with extraordinary vigour and liked plenty of work, and not even his intimate friends had any idea that he suffered from heart trouble. I have no particulars as to his age, but he was, I think, about 40 years old. He leaves a widow, in whose arms he died, but no family. *A. Jefferies.*

Liverpool Botanic Garden.—Mr. Hackett of Kew has been appointed curator of these gardens in succession to Mr. Gutteridge who is now chief superintendent of parks and gardens.

ANSWERS TO CORRESPONDENTS.

Cherries: *L. F.* The lime and kainit, if applied in proper quantities, would be likely to do good. Take means to ascertain that the border is well supplied with moisture. Cherry trees are prone to flower abundantly, and we have known cases in which a timely thinning out of the blossoms has brought about a better set of fruits, for if the thinning is done sufficiently early, the remaining blossoms gather increased strength.

Grapes diseased: *T. H.* and *L. G. M.* The berries are affected with the "spot" disease—Glæosporium ampelophagum. Remove and burn all the diseased berries and spray the remaining ones with liver of sulphur, using ½ ounce of the sulphur to one gallon of water.—*A. E. G.* Your Grapes are rusted, and moreover are showing signs of "spot," see above answer. The Peach leaves are affected with silver leaf disease. You will find an account of these diseases in many back numbers, and in the *Gardener's Calendar*, which you can procure from our publisher for 7½d.

Italian Gardening Paper: *O. L.* Bulletino della Societa Toscana di Orticoltura, is the only one we know, 31, Via San Gallo, Firenze.

Names of Plants: *G. W. J.* Primula verticillata.—*J. C.* All forms of Rhododendron formosum.—*R. S. P.* 1, Asplenium salicifolium; 2, Guizotia abyssinica; 3, Linum austriacum.—*J. B.* Amygdalus nana.—*G. J. Y.* 1, Berberis Darwinii; 2, Berberis empetrifolia; 3, B. nepalensis; 4, Cassinia fulvida; 5, Andromeda floribunda; 6, Juniperus chinensis.—*J. W.* 1, Codiæum (Croton) variegatum; 2, C. Wisemanni; 3, C. Aigburthense; 4, C. majesticum; 5, C. Mrs. Dormer; 6, (probably) picturatum.—*A. W.* Schizanthus pinnatus.—*E. P. Co.* Saponaria ocymoides.—*Racomitrium.* Why not number your plants? The flower is Crocosmia aurea. The smallest leaf is Rhamnus Alaternus. The two others we do not recognise.—*R. N. H.* A, Odontoglossum Adrianae ×; B, O. Andersonianum. *S. Y.* 1, 2, 3, forms of Cattleya intermedià; 4, Peperomia argyrea.

Onions: *T. L.* You omit to say what variety of Onion was sown, and, of course, there is the possibility that the seed was not true to name. If the seeds were true, and the variety one such as is generally selected for garden cultivation, the plants may be expected to form bulbs eventually. They will not become Leeks.

Painting Glasshouses: *C. S. B. Coles.* Consult a local painter. Much will depend upon the condition of the houses, and the price of labour in your particular district.

Peach shoot diseased: *A. T.* The branch was much withered when we received it, but we suspect the diseased condition is due to fungus at the roots. This often causes Silver-leaf disease, the fungus forming a fluid ferment which is absorbed into the tissue of the plant. Remove the diseased portions of the tree and train in some young wood. In the autumn lift the plant and thoroughly examine its roots, when, if fungus is found present, cleanse them with a weak solution of permanganate of potash.

Pelargoniums: *E. B.* The cuttings appear to have been potted too deeply, and to have rotted from excess of water. Fungus comes to complete the mischief. Next season try cuttings from a source other than your own.

Saxifraga Ferdinandi Coburgi: *Correction.* For intricate read imbricate.

Tomatos: *R. E. H.* The plants are over vigorous, and have apparently been grown in too stuffy an atmosphere, with not sufficient ventilation. See an illustrated article on the subject in our columns for June 3, 1905.

Training Vines: *P. S. K.* Young Vines newly planted should be cut as hard back as possible, for the lower they are cut down the stronger will they grow. But in the case of Vines that are more or less established, the severity of pruning must be determined by the strength of the stem or the vigour of the plant. The temptation is great to leave a long rod on the young Vine, but in pruning or shortening a main stem the point to be kept in view is the power of the plant to form strong shoots from all the buds left. A healthy plant with stem of the thickness of one's thumb may be allowed some four or five feet of new stem. It is better, however, to err on the side of severity when pruning the main stems of Vines. Never on any account leave unripened wood.

Tulips and Narcissus: *T. L.* All varieties of Tulips and Narcissus produce flowers when the individual bulb is old enough, strong enough, and the conditions of cultivation are favourable. Your plants have failed to flower this season because the embryo flowers were not formed last year, and this was doubtless due to lack of strength. Later in the season let them be lifted and replanted. See also reply on p. 240 to *Geo. E.*

Tulips: *S. K.* Your bulbs are affected with the Tulip mould, for which there is no cure. Better burn the bulbs and take care not to plant in the same soil next year.

Vine and Datura leaves injured: *B. B.* The Vine leaves are affected with the "warty" disease, a condition due to intumescence of the tissue, but what causes this outgrowth is not known, although it is generally regarded as the result of growing the Vines in a too moist atmosphere. The Datura leaves have probably been eaten by weevils, and the reason you have failed to detect them is that they appear principally at night time, hiding during the day. Trap them with pieces of vegetable such as Potato, Carrot, or Turnip.

Vine: *A. S.* There is no trace of disease present caused by either fungi or insects. The injury is caused by the leaves having too much moisture upon them during hot sunshine, which induces scalding. Plenty of ventilation early in the morning is necessary to remedy the evil.

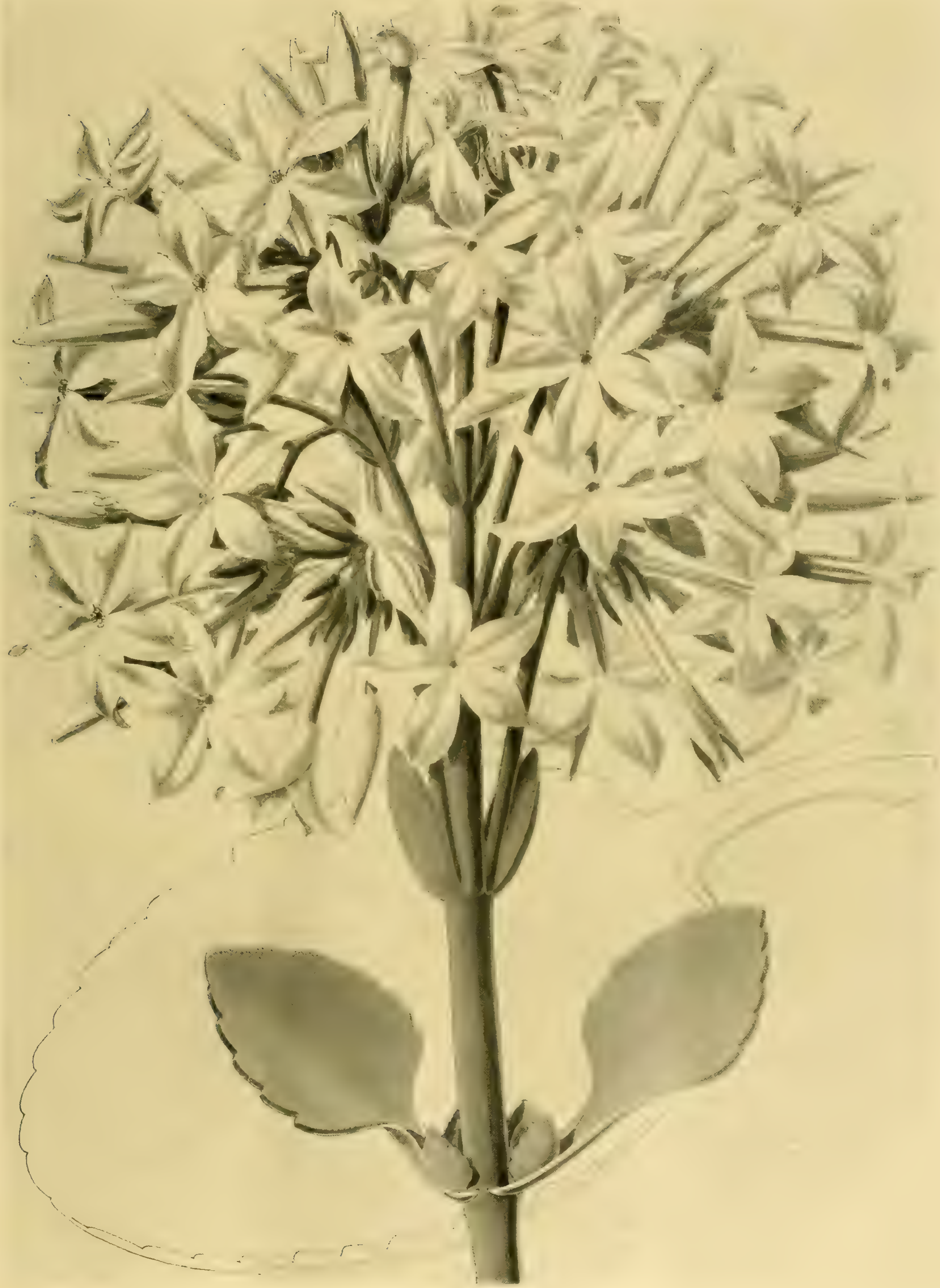
West African Orchids: *N. H.* The enumeration of the species of African Orchids occupies 276 pages of the Flora of Tropical Africa—so that you can hardly expect us to pick out for you what you want. Eulophia, Ansellia, and Lissochilus are among the most showy genera. Fifteen or sixteen pages of the catalogue of Welwitsch's African plants, principally from the south-western tropics, are occupied with the enumeration of species of this order. If you wish to send West African Orchids to this country for commercial purposes, it will be better for you first to learn what species can be sold here to advantage, and this information must be obtained from those engaged in the trade.

Wood Preserving: *L. S. C.* On p. 430 of our issue for December 17, 1904, will be found details of a simple process invented by Mr. Powell for preserving wood. The principal feature of the process is the use of sugar as the preservative. Sugar would be in no way injurious to plants.

Communications Received.—G. P. H.—G. H.—J. W.—L. B. (New York)—J. Burtt Davy (Transvaal)—Basil Levitt—J. G.—A. H.—E. H. J.—T. E. H.—G. P. H.—T. S.—W. G. S.—G. S. B. & Co.—H. R.—J. D. G. M.—J. G.—E. H. J.—E. T. C.—Dobbie & Co.—F. B.—A. C. H. (next week)—A. W.—S. W. F.—J. V. & Sons—E. T. C.—F. W.—Hortus—J. M.—W. K.—J. C. M.—J. F. R.—J. J. F.—Lady K.—R. P. B.—E. Y.—B. St. J. A.

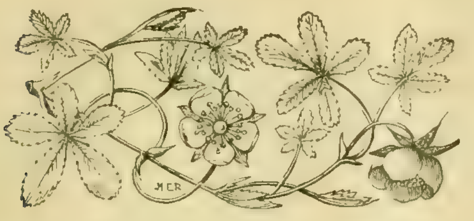
For Market Reports see page x.

Supplement to the "Gardeners Chronicle."



Kalanchoe Dyeri; a species from Nyassa-Land, flowers white.
From the Collection of Messrs. Jas. Veitch and Sons.

Temple Press Ltd., Printers, 17, Rosebery Avenue, London, E.C.



THE

Gardeners' Chronicle

No. 1,010.—SATURDAY, May 5, 1906.

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ONCOCYCLUS IRISES.

MR. Jenkins' remarks on raising Oncocyclus Irises from seed have tempted me to say a few words. I have for many years past raised these Irises from seed, and have carried some kinds through three or four generations. Without these seedlings some kinds would have disappeared from my garden much more rapidly than they have done; but I cannot say that I have been able to observe any distinct adaptation to the demands of our unfavourable English conditions. A seedling is nearly always, for a certain length of time, more vigorous than a plant grown from an offset. If allowance be made for this, the plants raised from seed are as difficult to rear successfully as are other plants. The Palestine Oncocycli, for instance, raised from seed are just as troublesome as imported ones.

Both Oncocyclus and Regelia Irises go to seed very freely with me, and this leads me to suspect that even in their native homes they may be short-lived, reproducing themselves largely from seed. There is no trouble about getting seed; the difficulty lies in raising the plants from seed. The seeds are very slow and uncertain in germination. Those sown in the open sprout more freely than those sown in pots. But, on the other hand, the seeds sown in a pot are much more under command than those sown in the open. The top soil in a pot can be sifted at any time; the seeds, being large and easily handled, can be picked out and sown again. A gathering of seed can thus be kept under observation for many years; and this is desirable, for, as I have said, germination is very slow and very uncertain.

When a pod of seed, containing about forty seeds, is sown so soon as ripe, say in July, in a pot, and left to itself, the next spring there may appear one or two plants, or very rarely a good many more, frequently none at all. The second year the same varied results may be obtained, and so in succeeding years. The pot, however, may remain several years without any further germination taking place in it, and then in another year one or two, or even several plants may appear. I have therefore been led to keep my seed-pots for many years, so long indeed as any sound hard seed remained in the pot. I have thus raised plants from seed which had been sown fifteen years previously, and the plants thus obtained were as vigorous as those which came from seed which had germinated quickly. I imagine that if I live I shall find the period during which the seed remains alive and capable of germination to be even longer than the fifteen years which I have now actually observed.

Some years ago I made a number of experiments with a view to getting more command over germination. I subjected the seed to various conditions, but I got no satisfactory result, and since then I have adopted the practice of leaving the pots in the open, rarely, if ever, watering them, not protecting them at all, but simply allowing them to get such good or harm as they might from rain or drought, frost or sun.

When the seeds are sown, not in pots, but in the open border, in prepared seeding beds, they germinate, as I have said, more freely; but it is almost impossible to keep such beds under inspection and free from weeds, etc., for a sufficiently long time. But I have seen enough to convince me that, even in the open, seeds may germinate after many years. I find myself each year hesitating between sowing seeds in the open bed or in the pot, each method having its own advantages.

But the difficulties are not over when the seed germinates. The young Oncocyclus (or Regelia) Iris grows very, very slowly, and I lose many of the seedlings in the first year. Some, especially the kinds from Palestine and the hybrids from these, are very apt to germinate in late autumn, and great care is then needed to carry them through the following winter, for these tender seedlings cannot withstand frost.

I take the seedlings from the pot and repot them almost as soon as they appear, and then grow them singly in pots until they are large enough to be planted out. This process retards their growth. Those sown in the open grow more rapidly and strongly, but, when left in the bed, many of them succumb in the winter unless most attentively watched; they are thrown up out of the soil by the frost, and if left exposed are killed. Those, however, which survive come to flowering estate earlier than those nurtured in pots.

After the first year the difficulties are less. During the second year some succumb, and that whether the resting period is secured by taking them up or putting lights over them; but many grow up into good strong plants, flowering the third, fourth or some later year.

The difficulties on which I have dwelt are mainly with the Oncocyclus Irises and their hybrids. The Regelia Irises are much more easily dealt with, for these will often flourish without lifting or drying off with lights when planted in good rich soil in dry, open sunny situations. The seed of plants which have not been hybridised I sow in the open and leave the seedlings, without taking any special care of them, in the seed-bed until the summer of the second year. I then take them up, "dry them off," and re-plant them in late autumn. There is no difficulty in thus obtaining a large number of flowering plants. The seed-bed, after the removal of the seedlings, should still be watched as a seed-bed, for many seedlings will appear in subsequent years.

With the seed obtained by crossing a Regelia Iris with an Oncocyclus Iris (and I have had many crosses of this kind) I am naturally more careful, sowing the seed in pots, or, if I sow it in the open, I give them special attention. But the seedlings are much more vigorous, much more easily dealt with than seedlings coming from crosses of Oncocyclus Irises among themselves. The greater robustness of the Regelian parent, whether father or mother, makes itself most distinctly felt in the offspring. All these Regelian hybrids are more or less beautiful, some of them exceedingly so; and I find myself leaning more and more towards them; they give a far better return for one's labour than do the wayward, fugitive Oncocycli.

I have also raised a large number of crosses between Irises of the Oncocyclus and Regelia sections with the bearded Irises, I. pallida and others. The seed of these germinates slowly and uncertainly; the seedlings grow for the most part slowly at first, though some show from the very outset considerable vigour. The plants thus raised have the advantage of not needing any summer rest. They flourish quite well when left to themselves. Some are very robust, increasing rapidly and rarely "go off"; others do not do so well, increasing slowly, and showing a tendency to decay in the root stock. As a rule, moreover, they do not flower freely, but I find that in this respect they improve if left undisturbed for several years. Unfortunately none of them possess the rare and delicate beauty of the pure Oncocyclus or Regelia type, though some of them come near to this. Many are grotesque, some even absolutely ugly, and have to be destroyed. All of them are very sterile, whereas the Onco-Regelian hybrids bear seed freely; in the course of many years I have only succeeded, in spite of active pollination, in getting a score or less of sound seeds from a large number of blooms, and very few of these have germinated, so that I see little chance of taking advantage of the Mendelian law in respect to them. *M. Foster, Shelford, April, 1906.*

PICEA MORINDOIDES.

The history of this interesting species has been given in our columns in a previous issue, p. 218, together with a note by Dr. Henry. It is one of the flat-leaved Spruces, which are so interesting from their geographical distribution, as well as from their shapely appearance. From the illustration, for which we are indebted to the courtesy of the Earl of Annesley, it will be seen that Picea Morindoides, like its congener P. Omorika, forms a handsome, symmetrical tree. At present we have no information as to its cones or as to its value as a timber tree

NEW OR NOTEWORTHY PLANTS.

MEXICAN EUPATORIUMS.

Three handsome Eupatoriums are now in flower in the Greenhouse at Kew, and as two of them have been figured in the *Gardeners' Chronicle* under names now known to be incorrect, and the history of the other is very imperfectly known, the following notes may prove serviceable.

Eupatorium Purpusi.*

This species is a native of Lower California, and was described by Brandegee in 1899, from specimens collected at San Peblo by Dr. C. A. Purpus in the preceding year. It was soon introduced to cultivation, for it flowered in the collection of W. E. Gumbleton, Esq., of Queenstown, in 1901, and was figured [after reference to Kew] under the name of E. petiolare, which proves to be incorrect. Mr. Gumbleton describes it as a very free-flowering and fragrant species, exhaling a delicate odour of Vanilla, and a valuable acquisition for the decoration of the greenhouse at an early season when flowers are scarce. He obtained it from Herr H. Henkel, of Darmstadt, under the name of E. Purpusi. It is an erect herbaceous plant, about 6 feet high, with nearly glabrous stems, cordate roughly toothed leaves, and a profusion of corymbose panicles of beautiful white heads, which render it a very ornamental subject.

E. Purpusi var. monticola.†

This plant was described by Brandegee at the same time as the preceding, from specimens collected by himself on high mountains of the Cape Region, Lower California, in 1899. With it I identify a plant which was exhibited at a meeting of the Royal Horticultural Society, on February 23, 1904, by Messrs. H. Cannell & Sons, under the name of E. petiolare, and to which an Award of Merit was given by the Floral Committee. It was subsequently figured under that name, which, however, is incorrect. Brandegee remarks that the upper portion of the stems, pedicels and involucres are so glandular-viscid as to catch numerous small insects, and suggests that it may prove to be a distinct species. The Kew plant is about 3 feet high, very straggling in habit, with thicker leaves, while the viscous character already pointed out is remarkable. The achenes are also brown, and slightly scabrid, not nearly white and smooth, as in E. Purpusi. It certainly appears specifically distinct, and the name E. viscosissimum† is suggested as suitable for it.

The determinations were submitted to Dr. B. L. Robinson, of the Gray Herbarium, Harvard University, who is studying the genus, and he replies: "I think you are right in supposing that the plant represented in *Gardeners' Chronicle*, 1901, i., p. 379, fig. 142, is E. Purpusi, although the figure shows the pedicels much thicker than they are in nature. I presume also that fig. 68 in *Gardeners' Chronicle*, 1904, i., p. 163, represents E. Purpusi, var. monticola of Brandegee." He also sends to Kew a few heads from authentic specimens sent to him by Mr. Brandegee. Referring to the true E. petiolare of Moçino and Sessé, he well points out that it is a vigorous shrub (not herbaceous) with different leaf texture and pubescence, and pubescent achenes, and he remarks that its range of habitat from Monterey to southern central Mexico renders it unlikely that it is identical with E. Purpusi, which is apparently confined to Lower California.

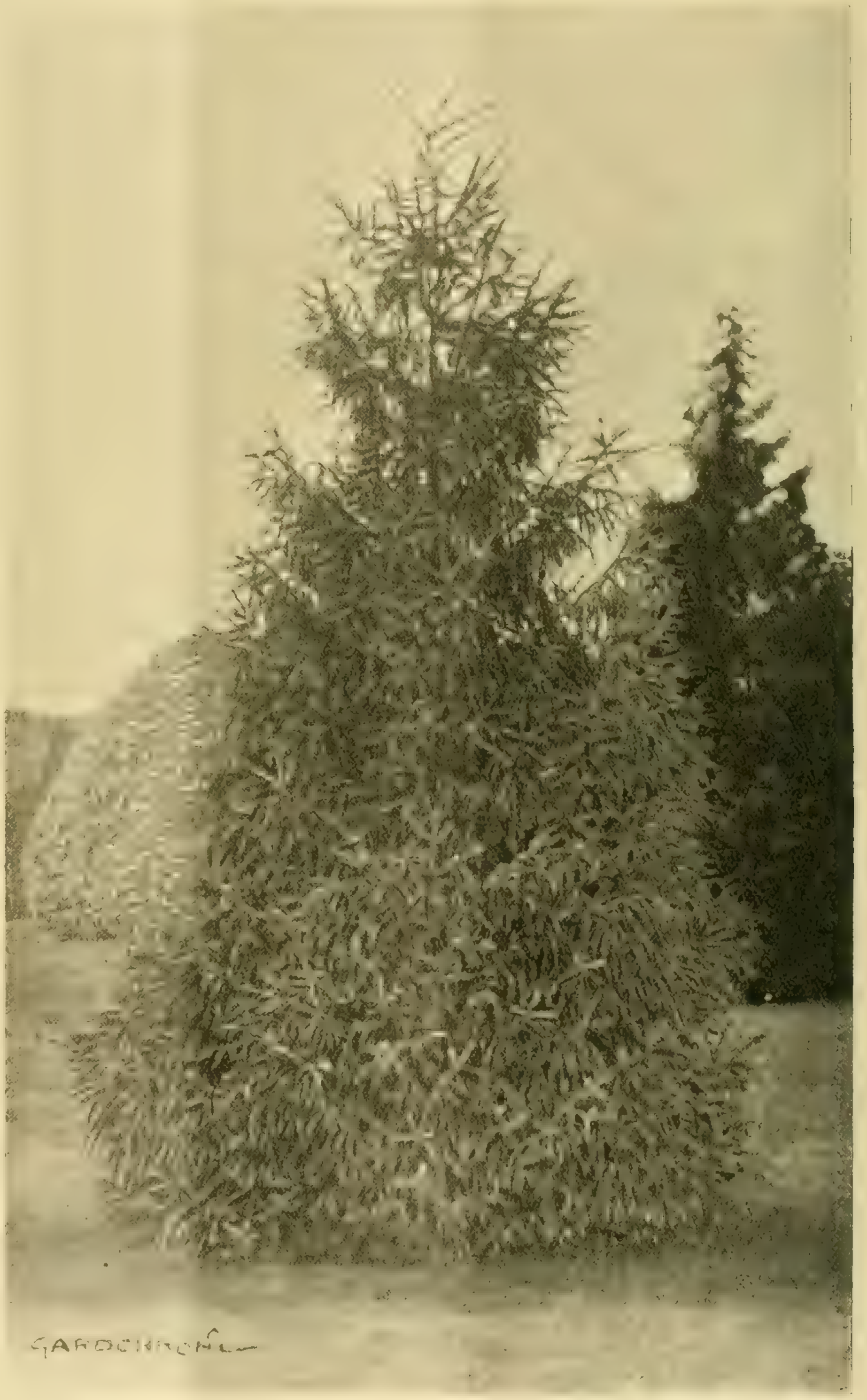

Fig. 113.—Picea Morindoides growing in the Earl of Annesley's Garden at Castlewellan, Co. Down.

E. trapezoideum ‡

This is a finer plant than the two preceding species, and it is curious that its history should be so imperfectly known. It is, however, an old garden plant, and was described in 1847, from plants in the Berlin Botanic Garden, which had been cultivated for three years under the name of E. adenophorum, until it was found not to be Sprengel's plant of that name. Its habitat is recorded as "Mexico" (?) The Kew plant is about 6 feet high, much branched, with trapezoid-ovate, coarsely toothed leaves, and bears very numerous corymbose heads of white flowers which are scented, the fragrance resembling that of Heliotrope. The achenes are blackish brown in colour and are smooth. The species does not appear to have been figured, though a painting has now been prepared for the *Botanical Magazine*. *R. A. Rolfe.*

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* [illegible] Brandegee in *Erythea*, vii., p. 3. E. petiolare, [illegible] 1901, i., p. 379, fig. 142; *Kew* [illegible] 3, p. 86 (not of Moçino & Sessé).

† [illegible] E. Purpusi var. monticola, Brandegee in *Erythea*, vii., p. 3. E. petiolare, *Gardeners' Chronicle*, 1904, [illegible] 142 [illegible] (not of Moçino & Sessé).

‡ E. trapezoideum Kunth, *Ind. Sem. Hort. Berol.*, 1847, p. 13.

HIPPEASTRUM.

AT Fig. 114 we publish a reproduction of a photograph kindly sent us by Mr. James Guttridge, superintendent of the public parks and gardens at Liverpool. Mr. Guttridge has made repeated attempts at the Botanic Gardens to effect a cross between some of the garden forms of Hippeastrum and Crinum Powelli, and the plant illustrated was raised from seed obtained from a flower which had been thus pollinated. It is entirely different in appearance, writes Mr. Guttridge, to any form of Hippeastrum in the whole of the collection, which numbers some 2,000 plants. On an inspection of the flower it appeared to us likely that although an effective cross had probably not been obtained, the nodding appearance of the flowers seemed to indicate that the Crinum pollen had at least some influence on the Hippeastrum. The specimen was forwarded to our correspondent, Mr. A. Worsley, Mandeville House, Isleworth, who subsequently wrote us as follows:—

"I have examined the flower. The ovaries are abnormal, and the plant probably sterile. It is a form of H. vittatum, a species most commonly used in hybridising, and whose dominant colour-markings still persist in a very large proportion of garden forms in which white is in evidence. I have found that a proportion of garden mongrels revert to the typical markings of vittatum, even when retaining the form and size of their parents. I have a number of cross-bred plants which revert in this way, and every year I throw most of them out, although occasionally a very fine one occurs. I do not think Mr. Guttridge can ever succeed in crossing Hippeastrum with Crinum. I made many attempts ten years ago, and finally abandoned the effort as hopeless. Hippeastrum has never been reconciled with any other genus, not even with its near ally, Sprekelia. Perhaps if someone would reintroduce the lost "link" Hippeastrum (or Sprekelia) Cybister, we might have a chance of doing something. Mr. Guttridge will find several similar forms (and crosses) of H. vittatum figured in *Bot. Mag.*, *Bury Hex.*, and other works. *A. Worsley.*"

AN APRIL DAY AT WISLEY.

"WHEN proud-pied April, dressed in all his trim, has put a spirit of youth in everything," horticulturists will do well to visit the Wisley Gardens of the R.H.S., for by old May Day the floral spring chapter will have closed; the fruit-tree bloom will have fallen, the glorious Narcissi will have faded. It has been a cruel April for gardeners. On the morning of the 24th ult., when I went round, the thermometer had been as low as 18°; it had nipped the Struthiopteris; but the fine plants of Gunnera manicata were luckily protected; the hardier Gunnera scabra, and even the noble Dicksonia antarctica were unharmed; while the nightingale and cuckoo, heard together for the first time this year, recorded their belief that the snowy whirlwind of the day before was a final compliment from the departing wintry spring.

The first sight just now to arrest a visitor on entering is a Prunus Pissardi, with foliage more brilliant and jewel-like than any of its brethren in the garden. Of other flowering trees and shrubs, he will observe Pyrus Maulei, with an orange tint enlivening its scarlet petals, and a Pyrus malus floribunda, quite exceptional in the profusion of its bloom. We noted, too, in passing, the size and beauty of the New Zealand Flax, Phormium tenax, an unusually large Ilex, and an Umbrella Pine, Sciadopitys verticillata, recalling the grove of these fine trees near Cannes. Of notable smaller shrubs were the Dwarf Almond, Prunus nana, with its delicate rosy bloom, Rhododendron rhodora, and Gaultheria procumbens, the curious crimson berries lurking amongst the leaves. Everywhere on banks or in beds were the endless varieties of Narcissus, including the delicate N. juncifolius and bulbocodium, with N. triandrus, and its triple blooms, known as "Ganymede's Cup" or as "Angel's Tears." Equally numerous and various were Anemones, red, blue and white; we were desired especially to notice the pretty A. Robinsoniana; and, recalling botanical walks in search of it through the Royston fields, we recognised with pleasure our native Pasque flower, A. Pulsatilla. Amongst these stand up, queen-like, the pure blooms and glossy triplicate foliage of Trillium grandiflorum, the Wood Lily of America, interspersed with its variety roseum. We enquired for that other beautiful American plant, Epigœa repens, the May flower, which, springing up everywhere in Canada so soon as the snows melt off the ground, gave its name to the historic vessel in which the Pilgrim Fathers voyaged; it was not yet out, and its neighbour, Shortia galacifolia, had been checked by the cold. One of our party, familiar with the Iffley meadows, asked for Fritillaria Meleagris, and there it grew in both kinds;

> "I know what white, what purple Fritillaries,
> The grassy harvest of the river fields,
> Above by Fynsham, down by Sandford, yields."

And the allusion led our guide to show two tints of Gentian growing side by side, representing exactly the Oxford and the Cambridge colours. He pointed also to a triumphant proof of skilful gardening in the picturesque unfolding foliage of Meconopsis Wallichii, difficult to rear in the open, as some of us may have discovered. In a sheltered nook grew a rare pink Oxalis, apparently a variety of O. acetosella, discovered by Mr. Wilson in Ireland. The common Dog-tooth Violet was fruiting, but we saw the pink Erythronium Johnsoni, and the finer white E. giganteum, which will grow, as we were told, only under deciduous trees. The Cornus canadensis or Bunchberry was sending up its bright whorled leaves. The true blooms are insignificant, but it exhibits four large white bracts, which are mistaken by the uninitiated for the flowers. It grows across the American continent, and is said to spring spontaneously on the fresh embankments of railway cuttings. The spring Starflower, Triteleia uniflora, was at its best, as was the dainty yellow Viola lutea; while bare edges and corners were hidden by patches of double Arabis. The rock garden showed Aubrietias, Lithospermum prostratum, and the beautiful Arnebia echioides, still rare in England, though long ago introduced, having five black spots on its corolla of primrose-yellow. It is called the "Prophet flower," why, no one seems to know. A pond filled with the "Hawthorn Water Lily," Aponogeton distachyum, scented the air far and wide. Finally we passed to what in autumn is a Dahlia bed, now holding a great multitude of Tulip bulbs, to see the glory of the collection, Tulipa Fosteri, appropriately named after Sir Michael Foster. Of a hundred other lovely but more familiar plants, of the birds warbling untaught harmony in every bush, of the nesting boxes fitted in the trees for the white owls, starlings, flycatchers, tits, and of the careful exclusion from their paradise of the beautiful but predaceous jay, "Time," as with wise economy says the Epistler to the Hebrews, "would fail to tell." These my mind bore away, and these I commend to my brother Corycians. If they visit Wisley now, and share my great good fortune in being personally conducted by the well-equipped and kindly instructive superintendent, Mr. Wright, they will garner erudition of more kinds than one, and, for their own gardens, invaluable practical hints. *Corycius Senex.*

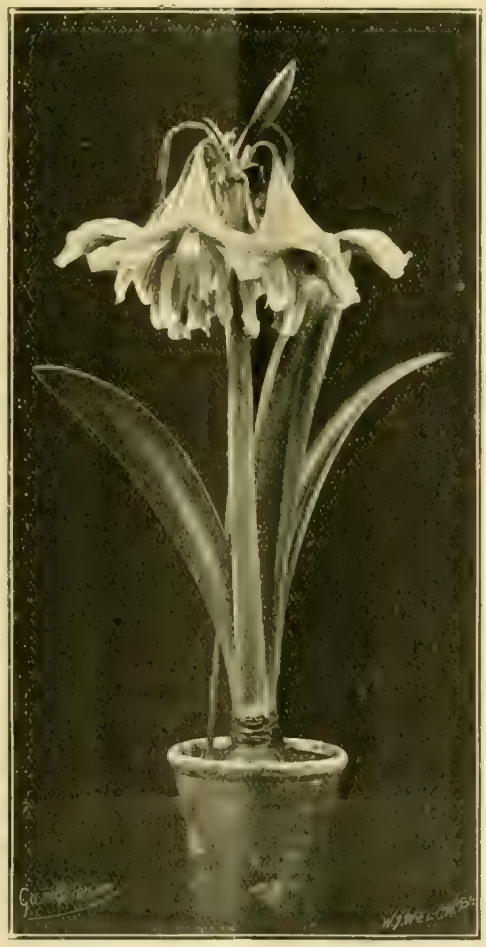

FIG. 114.—HIPPEASTRUM RAISED FROM SEED AFTER ATTEMPTS TO CROSS THE FLOWER WITH A CRINUM.

COLONIAL NOTE.

PACKING SEEDS FOR THE TROPICS.

YOUR correspondents "W. D." and A. C. Bartlett are of course free to give their opinions. They confessedly have not had tropical experience, and cannot be aware of the conditions which are met with there. That is not their fault, but their misfortune. "W. D." quotes his 15 years' experience in handling "thousands of packets," to which I answer I have had 30 years' tropical experience, and have conducted many experiments with seeds received from England; I know, as an Englishman, how long, and how well, seeds will keep there, and I should know, from 30 years' regular importations, something of their behaviour on this side. As I said in my first letter, "there is nothing in seeds growing on a single occasion," but the crux of the matter in my other statement is overlooked, "that if left in paper packets for even short periods they become utterly useless" (p. 164). It is a question of working, not of opinion, and it would be absolutely useless for us to attempt to follow the advice given by your correspondents. If they were resident as I am, I am persuaded they would abandon their English ideas, as I did, and would take care, by proper packing, to secure growth in imported seeds. The proof of the seeds is in their germination, and when we find seeds will not keep in paper packets, we try to adopt some measure which will tend to lengthen the period of their vitality. For this buyers do not object to pay as much as 25 per cent. on the cost of the seeds, and they would hardly do this if they could be otherwise kept. The fact of large firms taking up the matter and of others being induced to do so by my note also shows that an endeavour is to be made to meet a recognised difficulty. The trials made in England are no doubt carefully carried out and have their value, but why should not carefully conducted trials on this side be given an equal consideration? The sum and substance of the remarks of your correspondents, "W. D." and "A. C. B.," is that I must be wrong because they, without any tropical experience, must be right. I solve the question by an actual working experience of long standing, and by actual results. They solve it by reporting that seeds from India, China, etc., germinated well, but that does not even touch the question of seeds maintaining vitality in a tropical climate. Everyone here knows that English and American seeds sent here for sale will not keep their vitality, and all persons selling them have to import supplies at frequent intervals if sold in paper, but if sold in properly prepared packets of tinfoil, sealed against insects and moisture, they can, and do, preserve their vitality for a greater length of time. If your correspondents are willing to test the matter, let them try to keep Peas, Lettuce, or any other seeds, in a temperature having a mean of 84° Fahr., with a relative humidity of .80, and I think they would soon find seeds lose their germinating powers. This condition might be found in some stove at home, but even there the heating apparatus would keep them in a drier condition than with us. For some months in the year the moisture in the air stands daily, for some hours a day, at saturation point, and though not giving seeds (wrapped in paper) sufficient moisture to enable them to grow, still gives them enough to make them lose their vitality. The greater number of microscopic fungi in this climate also exerts a pernicious effect on seeds, and their growth is rapid and destructive.

Until your correspondent reminded me of its presence, I had not noted Mr. Watson's article on seed-packing. Now that I have read it, I find Mr. Watson recommends "common sense" packing, and in that I agree with him; but must explain that "common sense" here and "common sense" in England would mean two different things. I try his method and I find it unsatisfactory for my importations. I try another method and I find it excellent. Why should I be persuaded to adopt something else while I am well content? I have received hundreds of packages from Kew, but, although I have an excellent record, cannot put on record that I have met with universal success. In fact, when inadvertently kept for some weeks, Kew seeds have suffered like the others; but as they are generally of such a valuable character as to merit immediate sowing, they always stand a better chance than any other.

Let me in conclusion put on record an experiment which could be repeated. An importation of English Peas was made. The first sowing gave 95 per cent. germination. The second, a month after, sown in exactly the same manner, gave 75 per cent. The third, another 30 days afterwards, gave 40 per cent., and the fourth 20 per cent. If sealed in dry air (a most essential condition) this deterioration is avoided. Sealing in moist air certainly tends to destroy the seeds. Here we cannot seal in dry air, as our temperature being high, our air naturally contains a large amount of moisture, and we therefore have not the necessary conditions. Hence, easily perishable seeds, as most of ours are, must be sent in a growing condition and packed in such a common-sense manner as to maintain such until they reach their destination. *J. H. Hart, Trinidad.*

PRIMROSE "GREENWOOD PIM."

We are indebted to Mr. Smith, of the Daisy Hill Nursery, Newry, for the opportunity of illustrating this very pretty variety. At first sight it might be taken for a double Primrose, but a section through the flower shows that the crumpled appearance is due to the luxuriant growth of the ordinary petals, which are folded and refolded in the way shown in the figure. It is, in any case, a very desirable variety. The section, moreover, shows that the stamens and the style are about on a level, which is unusual in Primroses.

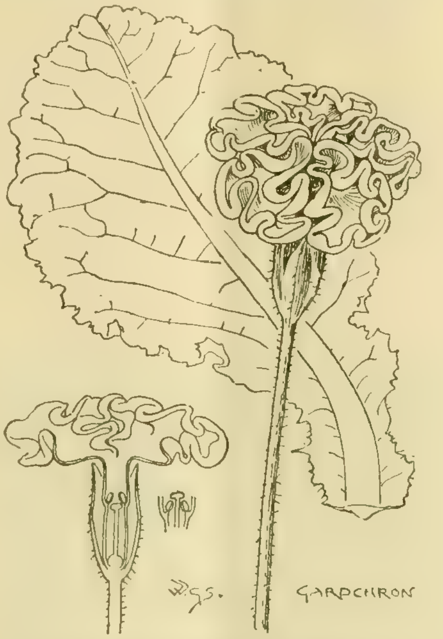

Fig. 115. Primrose "Greenwood Pim," a variety with frilled petals.

PLANT NOTES.

JASMINUM NITIDUM.

This charming acquisition to the list of warm greenhouse climbers was recently introduced from the Admiralty Islands. It produces a profusion of exquisitely scented, pure white flowers, borne in three-flowered umbels. The blossoms, consisting of from ten to twelve ray-like petals, are large, and are very light and graceful in appearance. The ovate leaves are of a bright green colour.

The plant can be propagated by cuttings, two or three inches long, taken with a portion of the old wood attached, and inserted in suitably crocked 3-inch pots filled to their rims with a mixture of leaf-mould and light loamy soil surfaced with sand. The pots should be watered through a fine rose, and then be placed under a bell-glass in the stove or propagating pit. When rooted the plants should be potted singly into small 60-size pots in the same mixture of soil as indicated above, making them firm in the process of potting. Return to heat, afford water to settle the soil, and subsequently shift the young plants into larger pots before their roots become matted, until they are finally placed in their flowering-pots or boxes or planted out in narrow borders in prepared soil. For training around pillars or for covering trellises in the stove or warm greenhouse this pretty climbing plant will be found useful and effective.

CESTRUM (HABROTHAMNUS) SMITHII.

This beautiful, semi-climbing plant is a great improvement upon C. elegans, from which it was raised as a variety. Its blush rose-coloured flowers in terminal trusses are freely produced during the summer and autumn months. It will be found a most desirable addition to the list of plants suitable for the embellishment of pillars, &c., in warm green-houses and conservatories. The plant is very easy of culture; cuttings taken with two or three nodes and inserted in properly crocked 3-inch pots filled with light sandy soil, placed in heat, and watered, will soon form roots and be ready for potting singly into small pots. *H. W. Ward, Rayleigh.*

LOBELIA TENUIOR.

This comparatively new Lobelia is a welcome addition for the decoration of the conservatory or greenhouse during the summer months. It is best treated as an annual, for old plants are with difficulty kept alive throughout the winter. Seed sown in March will produce nice flowering plants by the month of August, by which time they will attain a height of 18 inches, and as growth advances they will require supporting with neat stakes. These plants may also be grown in baskets and be allowed to droop naturally over the sides, where they will show off their flowers to advantage. The seed being very minute, it should only be covered with a pinch of fine sand. The seed-pots or pans, covered with a piece of glass and with paper until germination is effected, should be placed in a temperature of 65°. After germination, the pots or pans should be placed quite near to the glass roof to prevent the seedlings damping or fogging off. When large enough to handle, dibble them into pans or boxes filled with equal parts of loam and leaf-soil, with a dash of sand added, and allow the same temperature as before, but shade from bright sunshine until the roots become established, after which they should be removed to an unheated frame. Remove the points of any shoots that show a tendency to become leggy, for the plants often become drawn when grown under the above-named conditions. Before crowding takes place, pot the young plants into 3½-inch pots, finally transferring into others of a 5½-inch size, which will be found suitable for their flowering stage. A second pinching may be given before the last potting to induce the plants to branch freely. I have not seen this plant grown outdoors, but I see no reason why it should not be thus grown. At any rate, I purpose planting it in vases and baskets out of doors this summer.

CELSIA ARCTURUS.

This old inhabitant of our gardens is seldom seen nowadays, yet its bright yellow flowers are exceedingly pleasing, especially in late summer when arranged in conjunction with Lobelia tenuior. The plant is easily raised from seed sown now, and requires about the same treatment as the above-named Lobelia, with the exception of pinching the shoots, as I find much finer spikes of flowers are to be had when the plant is allowed to grow and flower at will. Although a robust grower, pots 5 inches in diameter will be found large enough for the plant's requirements, if diluted manure water be applied as soon as the flowering spikes appear. The shelter of a cold frame is found sufficient after the month of May, for the plant is half hardy with us, and flowers well out of doors towards the end of summer. Old plants can be grown a second year, and such plants are now in bloom with us in the greenhouse, carrying from 3 to 6 spikes. A stock can be obtained from cuttings, but as seed is cheap and easily raised, there appears no need to propagate from old plants, especially as seedlings make the best specimens. This species should not be confounded with Celsia cretica, the hardy herbaceous plant of our borders. C. cretica is also worthy of culture, and has yellow flowers on inflorescences about 5 feet high. Seed of this should be sown in the open about mid-June, and treated similarly to Myosotis, Wallflowers, etc. The Celsias are closely allied to the Verbascum or Mullein, the flower spike of C. cretica being similar in growth and the individual flowers about the same size and shape; in fact, many visitors to these gardens call these Celsias, Verbascums, but some of the latter are rose, white and purple-coloured, whereas all the Celsias have yellow or brownish-yellow flowers. *J. Mayne, Bicton.*

A DISEASE OF NARCISSI.*

THE Narcissi have so far proved remarkably free from the attacks of fungi and other pests; the only disease which has assumed a really serious aspect in many gardens being the yellow stripe disease which attacks a considerable number of varieties, Narcissus "Sir Watkin" being particularly prone to it. This disease is characterised by the appearance of yellow stripes down the foliage, and a dwarfing of the whole plant. Last season, however, large numbers of plants of N. poeticus growing in an orchard, where they had been planted three years previously, were attacked by a disease which does not appear to have been noticed before. Both leaves and flower-stalks were affected, but the bulb appeared not to suffer except so far as it was injured by the interference with the functions of the leaf.

The disease is characterised by the presence of large yellowish-brown spots on the leaves or flower-stalks up to 1 in. in length, sometimes appearing at the tips of the leaves, but usually some distance below (fig. 116, A) The spots first appear about the end of April, where the leaf or flower-stalk is attacked, the cells are killed and the upper part frequently bends over. When the flower-stalk is attacked, the flower naturally suffers, sometimes failing to open properly, and always being spoiled for market-purposes owing to the impossibility of plucking the flower with a sufficiently long stalk. Later the spots become covered with a fine, white powder, consisting of the spores of the fungus, which is the cause of the formation of the spots. The spores are produced in great numbers, and by their means the fungus is readily spread to other Narcissi growing near.

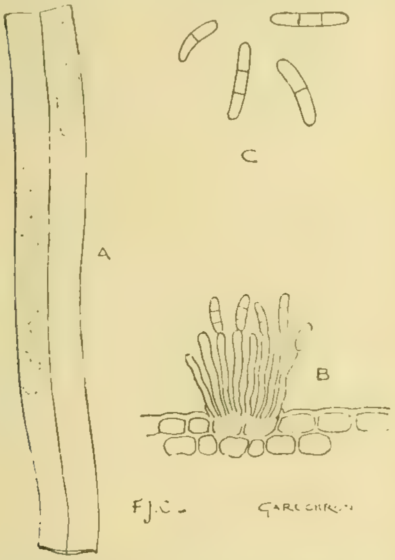

FIG. 116.—RAMULARIA NARCISSI.

A, portion of leaf of Narcissus with spots caused by fungus (natural size). B, fertile hyphae, and C, spores (highly magnified).

The best means of dealing with an attack of this fungus is by spraying, as soon as the spots appear, with a solution of potassium sulphide, at the rate of ½ oz. to the gallon of water.

The fungus appears to be a hitherto undescribed species of Ramularia, a technical description and figure are therefore appended. *F. J. Chittenden.*

NURSERY NOTES.

R. H. BATH, LTD., THE FLORAL FARMS, WISBECH.

ABOUT 14 years ago we first heard of this firm, and since that time it has established a wide reputation. The farms consist of about 1,000 acres of fertile land; much of it is devoted to the culture of hardy flowers and bulbs. At the time of my visit (April 12), Daffodils were the great feature, and, considering the weather we had had, it was surprising to find them in such fine condition. It is evident that the ground and cultural treatment suit them, for taking the many acres devoted to their culture, all looked remarkably healthy, and though the ordinary sorts were growing in a field fully exposed there was no sign of injury by frost or winds. The choicer sorts had a slight protection from the winds, but were otherwise fully exposed, and the fine blooms seen at the recent shows fully testify to the fact that they can be grown without any coddling. A large area was occupied by the choicer sorts. Of these I noted among the Ajax, or large trumpet section, King Alfred and King's Norton, and from the way they were flowering they promise well to take the place of older sorts for market when sufficient stock can be established. Golden Bell, Glory of Noordwijk, Weardale Perfection, and Madame de Graaff were all doing well. Lucifer was one of the best of the Barri section, and Flora Wilson is a favourite. Maurice de Vilmorin is another promising variety. Of Leedsi, Princess Mary and Duchess of Westminster were noted; and J. Bain is grown in large quantities. The Poeticus section was represented by some distinct varieties. Præcox grandiflorus was one of the best seen in quantity, but Eyebright, a newer addition, may supersede this. Ornatus is grown in very large quantities; in one piece I noted over two acres, and there were several other large patches.

Coming to other sorts grown in large quantities of Golden Spur, there are about four acres, though most of the bloom had been gathered, but it was evident from the healthy foliage that it was doing well. Major, though a very fine deep yellow, is not so free. M. J. Berkeley, not quite so deep in colour, was flowering freely. Emperor was in its full glory, and several large patches made a great show. Sir Watkin is very extensively grown, but most of the bloom had been gathered; it is found one of the most profitable. Of the bicolors, Empress and Horsfieldi were both very fine, and it would be difficult to say which was best. Barri conspicuus succeeds Sir Watkin, and is equally useful. Of the white varieties Mrs. Thompson and W. Goldring are favourites. Autocrat, a yellow self of the incomparabilis section, is much esteemed. Telamonius plenus is grown in very large quantities. Many more sorts might be enumerated.

Coming to the sheds, I found forty-five women busily engaged in bunching and packing, and that the bulk of the bloom is sent to the provincial markets.

Next to the Daffodils, Tulips are most prominent. A few of the most useful Dutch sorts are grown extensively. Of these, Yellow Prince, La Reine, T. Moore, Vermilion Brilliant, Prince of Austria, and Keizers Kroon were very prominent; but it is the Darwin varieties and the cottage garden sorts which are of most value. A little later they will be making a grand show, and, judging from the broad foliage and thick stems, there should be some grand blooms. The Parrot varieties also do well.

Herbaceous Pæonies are grown in immense quantities, and were making splendid growth, but the Tree Pæonies had suffered from the bad weather.

Herbaceous Pyrethrums are another feature. Only a limited number of varieties is grown in quantities, but these have been selected from large numbers that have been tried. Violets do well here, and a selection of the best sorts are grown. Among these I noted Mrs. D'Arcey, Baron de Rothschild, Souvenir de Jules Josse, Noelie, Lady Hume Campbell, and Marie Louise. Other sorts are also extensively grown. The Czar is still much in demand, five thousand being recently sent away for one order.

Violas, in a few of the most distinct colours, occupy long ranges of frames.

Pansies are largely grown. The Empress strain is now well known, and certainly are as fine as any I have seen. Many of the best are selected for seed. These were very fine, and the firm has a large demand for the seed, both for wholesale and retail orders.

Polyanthus and Primroses receive special attention. Those of the blue shades were specially good—in fact, taking all shades of colours, it would be difficult to find better.

Many other subjects are equally well done in the open ground. I should refer to the Chionodoxas, which are raised from seed, and represent all the varieties in large quantities.

Entering the glass department, I found Dahlias in profusion, about 80,000 being propagated. Carnations are also extensively grown; about 10,000 of the border sorts are potted on for flowering in pots, besides those planted in the ground. The American varieties are also well grown.

Chrysanthemums, chiefly the early flowering sorts, receive special attention. Clematis are extensively propagated. Roses of the newer sorts are grown in large quantities. Plants of Lady Gay, which had been budded in the open ground last season and potted in the autumn, were starting very vigorously. Other new Ramblers and Teas were doing equally well. *H.*

AN ENGLISH BULB GARDEN.

"Fair Daffodils, we weep to see
Ye haste away so soon,"

even in an ordinary season. But something other than time has been flying this season, and, short as the season of these lovely flowers is under normal conditions, the recent spell of cold north-east wind, with drought in its train, has blasted the flowers while yet in their prime. The outburst of genial weather at Easter-time but accentuated the injury, for the flowers responded to the glorious outburst of sunshine and warmth with such freedom, and hastened to unfold their flower scapes, only to be caught later by the cruel "north-easter." However, we must not be unduly pessimistic, for a trip to Messrs. Barr's nursery at Thames Ditton always repays the visitor in spring time—even though the Daffodils be not in such fine trim as in more favoured seasons; for this establishment may be regarded as one of the great clearing houses of the Daffodil world, for, apart from the many fine things raised in these nurseries by Messrs. Barr themselves, almost all the best and newer gems of the genus Narcissus can be found in these bulb gardens. Thus have Messrs. Barr acquired what is probably the finest seedling of the season 1906 in the beautiful Pearl of Kent, an illustration of which we hope to present to our readers in an early issue. Although it needs almost the purse of a Crœsus to purchase all the newer and up-to-date varieties, of which some are catalogued at £42 a bulb, there is a wealth of beautiful older varieties which can be purchased for a few pence, and great breadths of these can be seen at Ditton, and in truth can we speak of the "fields" of Emperor and its consort Empress, Weardale Perfection, a name it is justly entitled to, and not to Weardale alone, Beauty, and many another. But it is not of these old favourites we wish to descant, but of the little isolated batches, and, in some cases, single plants, that represent the newer members of the genus. A sturdy trumpet Daffodil, after the type of Monarch, is the first we have in our notebook. It is C. H. Curtis, one of the acquisitions of 1905. The trumpet is in exquisite

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* *Ramularia narcissi.* Parasitic. Spots yellowish brown, large, up to 2·5 cm. × ·6 cm.; later becoming white and pulverulent with conidia; hyphæ fasciculate, continuous, hyaline, suberect, 30–50 × 2·5 μ.; conidia oblong, straight or slightly curved, 1–3 septate, sometimes catenulate, 10–18 × 4 μ., hyaline. On leaves and flower-stalks of *Narcissus poeticus.*

proportion and tinted the deepest shade of primrose yellow. Near by is Cleopatra, also a trumpet or Ajax flower, and, being a second early variety, seen at its best. The segments are rounded and overlapping, the trumpet long and of deep yellow colour. Isolde, a tall, bold flower of large proportions, the yellow trumpet being set off by the creamy-white perianth. Those who have frequented the shows of the Royal Horticultural Society this spring cannot have failed to admire the vases of King Alfred, staged on more than one occasion, and to see it growing but confirms the good opinions formed of it. It is a flower of the greatest substance and of an intense golden colour, towering on stems 2 feet or more high, and with proportionately massive foliage. Next we notice is Lady Audrey, a flower in the way of Madme. de Graaff, but thinner in the trumpet, and with tube of deeper colour and more expanded throat. Salmonetta belongs to the Leedsii section, thus the chalice is not of such proportions as to entitle it to the designation of a trumpet, but its beautiful tinge of salmon colour seems like a setting to throw in greater relief the pure whiteness of its segments. We pass by Gloria Mundi, Duchess of Westminster, and Monarch, and notice Cassandra, perhaps the finest of all the poet's Narcissus. Tall of stature, and bearing its sweet flowers well above the foliage, we look in vain for its peer, for in none are seen greater substance of petal, form of perianth, or purity of colouring, and crowning all is the "eye" of richest red. In Cherry Ripe the eye becomes entitled to the designation of a cup or chalice, for it is of the Burbidgei section and intermediate with the Poeticus and the trumpet Daffodils, hence they are known as the Hybrid Poet's Narcissi or Dolly-cup Daffodils. The stature is dwarf, but it is a pleasing flower. The inflorescence of the group Tridymus furnishes something fresh, for the scapes become umbellate, and in place of the solitary flower we see a cluster. Quite one of the best is Cloth of Gold, the rich yellow trumpet and the paler perianth being sweetly fragrant, a quality derived from its Tazetta blood. Another good variety in this section is St. Patrick, and here the perianth is coloured primrose yellow. Frailty, a Burbidgei, was, no doubt, named from the delicate thinness of its petals and its modest hanging head. The cup is edged with red. Little Dorrit is not little, but a tall Burbidgei, whose cup opens of a beautiful orange-scarlet colour. The flowers are neat and of good form. A variety still in bud, while most of its companions are fully expanded or passing, is Cupid, a lovely Barrii. Apricot is the nearest Daffodil to red, and Loveliness is almost all one needs as a white trumpet Daffodil. The double Incomparabilis Primrose Phœnix furnishes us with a flower of great size, and, being produced with freedom, forms a capital subject for the flower border. Janet Image was raised in these nurseries. It is one of the finest Leedsii, with beautiful cone-shaped cup, paler in colour beneath, but suffusing to a deeper sulphur-yellow at the mouth, and thrown into relief by the charming white perianth. Vivid is of the Burbidgei section; the cup is very finely coloured orange-scarlet, and looks well against the creamy-white perianth segments. Oriana is a sturdy "bicolor," with large fimbriated trumpet of clear yellow colour. Other fine varieties are Maggie May, Elvira, Capt. Nelson, Albicans (one of the first white trumpet Daffodils), Countess of Annesley, Cassandra, Strongbow, Mr. C. Bowley (a favourite for furnishing cut flowers), Nelsoni major, and Ariadne. Before we leave the grounds we take the opportunity of peeping at the seed beds. These are protected by extemporised frames formed of old railway sleepers, and here the results of much careful hybridising and watching are eagerly awaited. Nothing very startling, however, has been evolved this season. One of the best is N. odorus rugulosus maximus, awarded an Award of Merit at the meeting of the Royal Horticultural Society on April 17.

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence Bart., Burford, Surrey.

The Cattleya House.—Many species, including C. Trianæ, C. labiata (autumn flowering), C. Gaskelliana, C. Percivaliana, C. Leopoldi, C. Loddigesi, C. Harrisonæ, C. amethystoglossa, Lælia elegans, and the numerous hybrid Cattleyas, Lælias, Lælio-Cattleyas, &c., are, with the increase of light and sun-heat, commencing to grow, and will soon be developing fresh roots. If any of the plants require fresh rooting material, or more root-space, the operations of repotting or re-surfacing must not be delayed, as it will be difficult to do the work later without causing injury to the new roots. When repotting thriving specimens do not unduly disturb or injure the old roots, but carefully place them into fresh, clean pots, keeping the base or rhizome of each plant on a level with the rim of the pot, for which purpose it is often necessary in the case of taller growing varieties to hold them in position with a few neat sticks. Avoid overpotting, but allow sufficient space for about two seasons' growth. For drainage I use well-dried bracken-rhizomes from peat turves, and in the case of small plants a few pieces only are placed over the bottom of the pot, but for larger specimens the quantity must be proportionately increased. The potting medium used at Burford is composed as follows—two-thirds of the best fibrous peat and one-third clean picked sphagnum moss, to which are added some rough half-decayed oak leaves, coarse silver sand and broken crocks, the whole being thoroughly well mixed together. For small plants and seedlings, a compost consisting of peat, leaf soil, and moss in equal parts, with the addition of crocks and sand, proves very suitable. The compost should be pressed moderately firm around and between the roots, filling the receptacle well up to the base of the plant. Small and moderate-sized specimens are surfaced with about half an inch of chopped sphagnum moss. For several weeks after repotting, keep them well shaded from strong sunshine, and afford water sparingly—especially to the larger-sized plants, until the new roots have established themselves in the fresh compost. Syringe well between the pots two or three times daily on warm sunny occasions. Owing to the depth of our potting material it is never thoroughly soaked through when water is afforded, but the surface is sprinkled with a fine rose watering can, and is kept moderately moist at all times. During the process of repotting I have observed that that part of the compost which is driest, viz., that down towards the drainage, possesses far more roots, and these are in a better condition of health than those found in a damp, wet soil. Such plants as Cattleya Mendeli, C. Mossiæ, C. Skinneri, Lælia purpurata, L. tenebrosa and the numerous hybrids whose flowering spikes are pushing forth will require rather more water at their roots till the flowers expand, but after the inflorescences are cut the quantity must be reduced again until growth commences afresh.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Ixoras.—These plants when properly cultivated will afford a valuable supply of choice cut-flowers throughout the greater part of the year. They will often remain in good health and a serviceable condition for several seasons, but once they become unhealthy, it is not an easy matter to restore them, therefore it is well to have a series of young plants that will take the place of those that are old or deteriorated. Cuttings inserted now will readily form roots; indeed, I consider the present is the best time to insert them. Short pointed shoots of the preceding year's growth, about 4 inches long, should be selected, and they should be severed just below a node. Retain the lower leaves and buds on the cutting, as it is usually from the buds below the surface that strong growths develop during the first two years. The cuttings should be placed singly in small pots, filled with good sandy peat, plunged in a bottom heat of 75-80° and kept in a close atmosphere till well-rooted, after which they should be repotted into 4-inch pots. Avoid over-potting at any period of the plants' development, for this is often responsible for failure. When the plants become established in their new pots they should be pinched to induce a bushy growth, and this will also frequently cause them to send up strong shoots from beneath the surface of the soil. I find in the case of I. coccinea better results are obtained by pinching the points out of the shoots than by pruning to harder wood, but in other varieties moderate pruning should be practised to keep the plants a good shape. Specimens with a good root system should receive frequent applications of manure and soot-water made by placing cows' dung and soot in coarse bags, steeped in tubs of water for a few days before use. The syringe should be freely used during the growing season. Small plants grown in 5-inch pots are effective in mixed groups of plants, while the inflorescences are always appreciated in stands of cut stove and greenhouse flowers at exhibitions.

The Stove.—Satisfactory progress in the growth of many plants should now be apparent in this department. The opportunity should be taken in bright weather to close the house early, for the temperature may then be allowed to rise to 85°-90°, and this without any fear of injury, providing the plants have been lightly sprayed with the syringe, and all spaces between the pots damped. As the sun increases in power daily, an additional light syringing at the close of the day will be beneficial, for this will promote atmospheric moisture that will do much towards keeping the plants in a healthy condition. Ventilation should be cautiously afforded should the present cold winds continue; bright sunshine will greatly send up the temperature, but this can be counteracted by lowering the blinds for a time, which is better than opening the ventilators and allowing the cold air to come in contact with the plants, and especially would this be injurious to plants newly potted. The night temperature of the stove should range from 65°-68°. Mealy bug will make rapid headway if prompt measures be not taken to keep the pest in check. In the calendar for January 6 will be found a very simple and safe insecticide for Mealy bug, which I find very efficacious.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Stopping and Tying Vine Shoots.—This work will now require almost daily attention, for it is surprising how the young shoots are drawn to the glass, even in one night. Great care is necessary in tying, for with strong growing kinds the shoots of the Vines are liable to snap off at their bases and leave unsightly gaps that are not easily filled. All sub-laterals should be pinched back to the first leaf, and shoots carrying bunches to two leaves beyond the bunch. Aim at covering the trellis evenly with strong foliage, for if the leaves are small and flimsy the fruit will not be satisfactory; moreover, where good stout leathery leaves are found, insect pests are not troublesome.

Tomatos.—Our earliest batch of plants, raised from seed sown during the last week in December, have made good progress and are carrying a heavy crop of fruits. Such plants will now be benefited by a top-dressing composed of turfy-loam, wood-ashes and bone-meal, and encourage the fruits to swell by an application of liquid manure two or three times a week. Keep the side growths pinched, and remove a little of the foliage periodically to allow the maximum amount of sunshine to reach the fruits. Tap each plant about mid-day in order to disperse the pollen, for by this means fertilisation is aided and a more even "set" secured. Successional plants should be kept steadily growing, and their pots placed well up to the glass Afford them larger receptacles as they require them. Seeds of "Sunrise" or "Perfection" sown now will furnish plants to follow for a late crop.

Melons.—Fruits in the early house will now require supporting, as they are swelling rapidly. Some growers use thick strips of raffia as a support, but Melon-nets are preferable, and they can be bought very cheaply. They are also useful for suspending the ripe fruits in the fruit-room, by which method they keep much longer than when placed upon the shelves. Some varieties of Melons when near maturity are prone to split, and especially so if the house is closed, with a high temperature and an excess of moisture. A drier and a cooler atmosphere should therefore be maintained at this stage, and root-waterings should diminish a little. Canker will sometimes make its appearance, especially if the compost is of too rich a nature, and deficient in lime and wood-ashes, which tend to keep the soil sweet and open.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

A Few Beautiful Hardy Annuals.—The season is now so advanced that no opportunity should be lost to complete the sowing of annuals intended for the coming summer's display. It happened that the weather during April proved so unpropitious for the germination of seeds in the open that lovers of hardy annuals who were prevented by circumstances from sowing earlier lost little by the delay, and it is even admissible to suppose they are the more fortunate on this account, as seeds were better out of the ground than subjected to such ungenial conditions. To achieve success in the culture of annuals, the necessity of sowing thinly, and afterwards to thin boldly according to the requirements of the plant, cannot be too often reiterated, for if these items are neglected, instead of obtaining robust, healthy leafage with finely developed flowers continued over a prolonged season, the result will be "thin, weedy" plants with imperfect bloom having but a brief duration. Of all hardy annuals the Tree Mallow (Lavatera trimestris rosea splendens) is one of the very best, and no garden where hardy flowers are esteemed could possibly be complete lacking this exquisitely beautiful annual. It is a beautiful plant in every way. The plants are vigorous and they have a noble appearance, while the colour of their large, bell-shaped flowers is a delightful deep shade of rosy pink, which is effective in masses or in small groups in the mixed border. They grow to the height of 4 or 5 feet when the profusion of their bloom is at its greatest, but they commence to flower when only 1 foot high, and are objects of exceeding beauty from then until they attain their full size, which lasts long into the autumn. This Lavatera is singularly well adapted for the making of a summer hedge, and, when smothered with its large flowers, affords a sight that it would be difficult to surpass with anything of a perennial nature. There is a variety alba, which is worth growing where white flowers are desired. Both are eminently suitable for cutting from for large vase decoration, as the flowers remain in good condition for a long time. The Lavatera thrives in ordinary soil, but especially so in a medium that is rich and light. From the description of the plant it will be readily conceived that the necessity of bold thinning and ample space for each seedling to develop is particularly imperative in its connection. An annual that is very often erroneously confused with the subject of the above note is the Mallow Wort (Malope grandiflora), but though very showy, and well worth growing wherever a bold crimson flower is desired, it is not to be compared to the Lavatera for beauty. It grows to the height of 18 inches or 2 feet, and requires a well manured soil to grow to perfection. The seeds should be inserted quite half-an-inch in depth—to ensure its rooting deeply, otherwise hot, dry weather would be inimical to its continuity of bloom. The Malope should be grown in masses to obtain the best effects. There is also a white variety. A most charming little hardy annual is Leptosiphon hybridus (Gilia), and it is very pretty if given a bed or small border to itself. Though desirable in most kinds of plants to avoid mixture of colours, the effectiveness of this particular Leptosiphon is much enhanced by mixing them with each other, for, sown thus, it forms a carpet thickly studded with bright, star-like flowers of rose, yellow, white, and lilac colours. Love-in-a-Mist (Nigella damascena) is too well known to need description, but it should not be omitted from any garden—especially Miss Jekyll's strain. It is suitable either for bed or border. Godetias (Œnothera), in all colours of brilliant and delicate shades, must not be forgotten. Phacelia campanularia is a sweet, dwarf-growing annual of a lovely blue colour, with prettily shaped foliage. In flower it resembles the Eutoca, another annual, but it is superior to it in all ways. It is only necessary to mention the following to remind the reader of their individual attractiveness, and the urgency of including them at once in the collection of hardy annuals if this has not already been done. The Californian Poppy (Eschscholtzia californica), Linum grandiflorum and L. sibiricum, Mignonette, Virginian Stock, Swan River Daisy (Brachycome iberidifolia), Sphenogyne speciosa, Linaria, Coreopsis, Lupines, Larkspur, Kaulfussia amelloides, and Viscaria.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Fruit Trees on Walls.—These must receive regular attention in the matter of thinning and training of the young shoots. Plum and Pear trees are greatly benefited by the removal of all useless shoots. In young trees, only those growths necessary for the proper development of the tree should be retained, and these should be in the best positions for training. Older trees should have some new wood conserved, in order to help rejuvenate the tree; especially should this be done in the case of trees showing signs of decay. Shoots growing too rampantly and at the expense of others should be either removed entirely or be pinched back.

Cherry Trees.—Keep a watch on these trees, and see that they are not attacked with Black-fly, and remember that "a stitch in time saves nine," for this pest spreads rapidly, and causes great destruction in a short time. Directly the trees have passed their flowering stage, spray their every portion with a strong solution of quassia extract. The insecticide should have the chill taken off before being applied, and if the weather is favourable the operation should be performed twice in one day.

Strawberries.—Keep these plants free from weeds, and if a favoured corner contains an early fruiting batch of plants, these should be covered up at night-time with some protective material. It is a good plan to cover the whole of the Strawberry plots with fine-meshed netting set on poles 5 or 6 feet high, with ropes or long deal strips across to enable persons to pass freely among the plants. This protection may be given as well now as later, for the netting will help to protect the trusses from the effects of frosts. I have found this of great value and efficacious in warding off several degrees of frost.

Vines out-of-doors are now breaking freely, and should be gone over and disbudded, leaving only one strong lead to a spur. Vines in the open in this country are not generally grown for their Grapes, but they are ornamental, and their leaves present fine autumnal colourings when grown on high walls and buildings. In some seasons, very good fruit can also be obtained —provided the bunches and the growths receive the requisite attention, and that their roots are attended to in the matters of feeding and watering. Vines are not so liable to contract diseases when properly cultivated.

General Work.—Keep a watchful eye, and see that no pests gain a footing on the fruit tree. See to the weeding and cleaning of the quarters allotted to bush trees. Attend to newly-planted standard trees, and afford water if necessary. Where the ground shows signs of cracking, the roots will soon become dry. To prevent this, stir the surface of the soil with a hoe. Water and mulch all new and rare fruit trees. Regulate the growths of such plants as the Columbian Raspberry, Japanese Wineberry, Loganberry, American Blackberries, etc. All growths not required on these plants should be pulled off to encourage those remaining to properly develop.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Cardoons.—Although very little grown as a general crop, this vegetable is sometimes required in large establishments. The first week in May is a suitable time to sow the seeds, for when sown earlier the plants often run to seed. The best manner of cultivating the plants is in trenches prepared exactly as for Celery. Plant the seeds 18 inches apart in the trench, in a single line, and afford plenty of water to the plants when they are growing.

Beans.—Select, as for previous sowings, a sheltered warm border for another plantation of French Beans. It is still too early to plant them in the open quarters as late frosts will destroy the seedlings as soon as they appear through the soil, but the next sowing, a fortnight hence, should be in the open ground, where they will not be so liable to suffer from drought in the middle of the summer. The small and tender variety, the Sugar Bean, should be grown in all gardens. The pods of this variety are quite narrow and small, but their quality is of the best, and the plant is a heavy cropper. Haricot Beans, intended for use during the winter months, should now be sown, thus allowing plenty of time for the seeds to ripen and become matured before storing. The Dwarf Waxpod or Butter Bean is also useful, and furnishes a complete change for the table, the colour being quite different to that of other Beans. Draw the soil up to the rows of Broad Beans in order to steady the plants when strong winds prevail, and at the time the flowers are showing, pinch the tops of the growths, which will not only help the pods to swell, but will also act as a great preventive against the destructive black fly; for, by pinching, the top leaves soon become too hard for the fly to eat. Another sowing of the long-podded varieties should now be made, together with one of the broad Windsor type, which is a free cropper and produces Beans of a fine quality.

Maize.—This vegetable is not so largely grown as it should be, considering the great demand for good "cobs" in the autumn months. A deep, rich soil and one in which the growth can develop to the fullest extent is required in order that the cobs may mature as early as possible and before frosts appear. Sow the seeds in lines 3 feet apart during the first week in May, and then transplant the seedlings to 12 inches apart.

Protecting Young Vegetables.—It is seldom that so much protection has had to be afforded crops of vegetables as has been the case this season. In many parts of the country snow has fallen in large or small quantities every day for the past week, and frost has been intense; here, this morning (April 27), we registered 12°. Everything should be prepared in readiness for immediate covering in the evenings. Mats, tiffany, straw, etc., can all be used, and it will be time well spent in doing the work. Leave nothing to chance while the weather continues in its present severe character.

Successional sowings of nearly all kinds of vegetables should be made, including Brussels Sprouts, Savoys, Broccoli, together with all kinds of salading, as well as Peas, Turnips, etc.

THE APIARY.

By CHLORIS.

Thoughts on Swarming.—As the swarming season approaches many visions pass through one's mind. We remember the day when a particularly strong colony swarmed, and the swarm made off without even settling near to cluster, as is their general custom. This is only a solitary instance of the many that could be quoted. A gentleman, who was a very enthusiastic bee-keeper, once wondered where his bees were at work, and by the aid of a little flour he discovered, after much labour, that they were working a field of Turnips, which were then in full bloom about three-quarters of a mile away. Shortly after discovering their pasture one colony swarmed, and without any apparent hesitation they made straight off for a hollow tree in that field. This makes one come to the conclusion that bees often decide on a new abode before swarming. This idea is borne out by the following incident: Last year I had a colony die and the hive was left standing empty. One morning, to my surprise, a small cast had taken possession of it quite early. A friend of mine said they went into the empty hive just as bees do when returning loaded from the field. I could then recall that I had seen bees passing in and out of that particular hive for several days previously, so I came to the conclusion that the visitors had been the pioneers in search of a suitable home. There is one certain cure for this, and that is to cut the wings of the queens.

Bees leaving the hive after hiving.—One is frequently asked why bees leave the hive after having been carefully hived, and how to prevent them doing so. They may leave because the hive is filthy, or cold, or in an exposed position. If a swarm be hived in a clean bar frame hive with a frame of brood in the centre they will not desert it.

Hunger Swarms.—Early in the season bees have been known to turn out simply because there were no stores, and such a swarm would be termed a "hunger swarm."

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, May 5 — Soc. Franç. d'Hort. de Londres meets.
WEDNESDAY, May 9 — Roy. Caledonian Hort. Soc. Show in Waverley Market, Edinburgh (2 days).
SATURDAY, May 12 Dutch Gardeners' Soc. meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—52·7°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, May* 2 (6 P.M.): Max. 52°; Min 41°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 3 (10 A.M.): Bar., 29.8; Temp., 58°; *Weather*—Dull, with occasional sunshine.

PROVINCES.—*Wednesday, May* 2 (6 P.M.): Max. 52° South-west coast of Ireland; Min. 45° Southampton.

SALES.

WEDNESDAY—

Hardy Border and other plants, Palms, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY—

Imported and Established Orchids from various sources, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Hortus Veitchii. Within the memory of some still living, Joseph Knight occupied a foremost place in the horticultural world. His nursery in the King's Road, Chelsea, now occupied by Messrs. Veitch, was one of the leading establishments of the day. He had as compeers the Loddiges, the Lees, the Chandlers—names still remembered with respect, as well as many others noted in their time, but whose names are no longer familiar, at least not to the present generation. What is it that has secured a permanent reputation for some firms, whilst others have sunk into comparative oblivion? It is not merely commercial supremacy, or what the world calls success. It is something more than that. A millionaire, for all his wealth, may not be a very estimable character, and the footprints that he leaves upon the sands of time may soon be obliterated. What confers lasting reputation is something that is done not for the individual alone, but for the benefit of the community, and for the advancement of his profession, whatever it may be. Joseph Knight was originally a gardener, then a successful nurseryman, but beyond that he contributed to the literature of botany and gardening by his work on the Proteaceæ, a class of plants out of fashion nowadays, but which the whirligig of time may some day bring into renewed prominence, and then Knight's book on their culture and their characteristics will be consulted by the cultivator as it still is by the botanist. Forty years after this the firm of Knight and Perry issued a synopsis of Coniferous plants which links the past with the present, and finds a successor in the Manual of Coniferæ issued by their successors, Messrs. James Veitch and Sons. These reminiscences are called up by the handsome volume before us, a volume which is undoubtedly certain to become a standard work of reference wherever horticulture is practised. We cannot pretend to forecast the commercial future of the firm: our point is that this book will survive the vicissitudes that time is sure to bring, and will be—nay, is—a striking illustration of our proposition that it is not commercial supremacy alone that secures the permanent reputation even of a business house.

The "Hortus Veitchii" is a sumptuous production. Paper, type, illustrations are all worthy of praise. Misprints are very few and far between. So much for appearances. Now for the contents. From this point of view the title page is most expressive. It runs thus: "Hortus Veitchii, a history of the rise and progress of the nurseries of Messrs. James Veitch and Sons, together with an account of the botanical collectors and hybridists employed by them and a list of the more remarkable of their introductions; by James H. Veitch." Five hundred and forty-one quarto pages, illustrated with fifty "photogravure" plates, constitute the volume.

Naturally, the history of the firm and brief biographical notes relating to its founder and his successors occupy the first place. It is to their enterprise and business capacity that we owe the great results of which this book is the chronicle and the record. Some of these gentlemen are, happily, still with us; they are personally known to many of us, and by repute almost universally. Important, therefore, as this section of the book is, we feel that there is little necessity for us to dwell upon it. The biographical notes relating to the travellers employed by the firm and to the work done by them are less well known and are, therefore, of special value for purposes of reference. Twenty-two of them are named, including the two Lobbs, Pearce, John Gould Veitch and his son James H. Veitch, Peter Veitch, of Exeter, a cousin; Maries, Burbidge, E. H. Wilson, and others. These names alone are sufficient to indicate the enterprise of the firm, the position of their employees, and the nature of the results obtained by them. Indications are given of the countries traversed and explored, and of the plants introduced through their agency. The former editor of this journal, Dr. Lindley, was enabled to publish in these columns many details concerning the explorations of John Gould Veitch and other intrepid collectors, and to describe many of the new species introduced by them. The wanderings of Mr. J. H. Veitch in India, Japan, Corea, Australia, and New Zealand were also chronicled in our pages and form the substance of a richly illustrated volume subsequently issued under the title of "A Traveller's Notes." At the present time the narrative of the remarkable journey of Mr. E. H. Wilson occupies much of our space, and not a few of the many new species and introductions have already been described in our columns, thus maintaining a tradition—purely a disinterested one on both sides—of which we have reason to be proud.

Following the account of the several travellers come short notices of Dominy, the pioneer of Orchid hybridising, of Court, of Seden, of Heal, and Tivey. With the exception of the first-named, these are all with us. A volume—a large one, too—would be required to chronicle the work of these renowned hybridisers and raisers. What we owe to them is strikingly apparent at every flower show and in most of the private establishments of the country. The approaching Hybridisation Conference makes us hope that a fuller account of the labours of these hybridists may be forthcoming on that occasion.

The section relating to the principal species of Orchids introduced by Messrs. Veitch occupies nearly fifty pages; that devoted to Orchid hybrids raised by Messrs. Veitch since 1853 takes up nearly sixty, together with a separate chapter later on. Singularly enough, the comprehensive work on the species and varieties of Orchids, entitled "A Manual of Orchidaceous Plants," published from 1887 to 1894 by Messrs. Veitch, unless we have overlooked the reference, is not mentioned. Incidentally, we may add that a new edition, re-cast, and brought up to date, would be an acceptable boon. Stove and greenhouse plants fill seventy-five pages; to insectivorous plants, including Sarracenias and Nepenthes, nine or ten pages are allotted, and Mr. Harry Veitch's paper in the Journal of the R.H.S on these plants is conveniently reprinted. About the same space is allotted to Ferns. Coniferous trees take up 12 pages. Here we miss the name of Mr. A. H. Kent, whose Manual of Coniferæ, also issued by Messrs. Veitch, is so useful. Various trees and shrubs fill thirty-five pages; evergreens twenty-one; herbaceous plants twenty-six; bulbous plants ten; Begonias six; Hippeastrums four. Greenhouse Rhododendrons, a well-known speciality of the firm, have a section to themselves, and so have the species and varieties of Streptocarpus. Those who know the splendid displays made by Messrs. Veitch at the R.H.S. of fruits and vegetables of various kinds will not be surprised to learn that they also are included in this volume, and more space might well have been allotted to them could it have been spared. It must not be thought, from the bare enumeration of some of the principal contents of this volume, that this is a mere catalogue or trade list on a grand scale. Indeed, its special value consists in the historical and botanical details relating to the plants mentioned, whilst purely commercial matters are conspicuous by their absence. To the present-day horticulturist the work will be of the greatest service, whilst to the future historian of horticulture it will be invaluable. A copious index renders consultation easy. The labour in compiling this volume must have been very great, the care expended in its passage through the press is equally apparent, for misprints are, as we have said, few and far between.

Our Supplementary Illustration.—Of all the beautiful hybrids derived from the big-lipped Brassavola Digbyana none surpass in depth of beauty Brasso-Cattleya "The Baron." Its other parent is Cattleya Lord Rothschild. A plant was shown by Messrs. Sander & Sons at the meeting of the Royal Horticultural Society on April 3, when the hybrid received the award of a first-class certificate. Not only is the flower of large size, but it is, in addition, of most perfect form, and shows elaborate freckling and veining in its colours. The sepals are coloured creamy-yellow, with light markings of rose on the front, and a suffusion of purple at the back. The broad petals, creamy-white to primrose-yellow in colour, are beautifully freckled with purple between the veining. The broad lip is pleasingly fringed, and has a ground colour of pale primrose-yellow, set off with an emerald-green base, the middle portion being charmingly decorated with rose-purple between the maculations, a creamy white band encircling the colour. The front is creamy-white, slightly tinged with rose. It is altogether a remarkable flower, and one of the acquisitions of the season.

Royal Horticultural Society.—The following circular is being issued to the Fellows of the Society. There can be no two opinions as to the propriety of recognising the services of the President, and from the influential names appended to the circular we have no doubt as to the success of the proposal:—"At the last annual meeting of our society, held on February 13, the President, Sir Trevor Lawrence, Bart., K.C.V.O., V.M.H., completed the twenty-first year of his presidency. When he first took up the office the society was at a very low ebb indeed, having barely 1,000 Fellows, no buildings of its own, and an annually increasing deficit. Owing in no small measure to Sir Trevor's wise guidance, it now has almost 10,000 Fellows, a magnificent hall and offices in Vincent Square, Westminster, and at each year's end a sufficient balance to make one feel confident for the immediate future. To celebrate Sir Trevor's twenty-one years of office the council have resolved to invite all the Fellows to subscribe towards having his portrait painted by Professor Herkomer to place in the society's new buildings, and also to establish in perpetuity a large gold medal to be called 'The Lawrence Medal,' to be awarded to exhibits of a specially meritorious character at the society's meetings, the want of such a medal having been felt for a very long time. To carry out these projects in a fitting manner, about a thousand guineas will be required, and we hope that you will allow us to put down your name for a subscription. Signed, on behalf of the council, J. Gurney Fowler, Treasurer." Cheques should be drawn in favour of J. Gurney Fowler, and crossed "London and County Bank." A considerable amount was received before the issue of the circular.

The Weather.—Mr. Fitzherbert writes from South Devon:—"Last night (April 25) we had the first rain of the month. Everything is terribly parched, and several plants of mine are dead, fortunately none of the rarest. Sutherlandia frutescens is now beautifully in flower in the open garden."

Eucalyptus in Jersey.—Owing to enquiries having been made as to a very fine specimen of Eucalyptus Globulus, alluded to in these pages some years since as growing in Jersey, we addressed a letter on the subject to Mr. H. Becker, nurseryman in that island, and he has been kind enough to send us the following information:—"The specimen of Eucalyptus Globulus referred to was fully 110 feet high, and was for a number of years one of the attractions for visitors to this island. The gardens at La Chair, Rozel Bay, were at that time sheltering many rare plants and tropical specimens, which the former proprietor, the late Mr. Curtis, of botanical fame, managed with much skill and patience to establish in a minimum of soil and with a maximum of all the difficulties the gardener may have confronting him. The situation was a practically barren rock within 200 yards of the sea, overlooking the straits and the coast of France. Wonderful things grew upon, and under the shelter of, that rock, but, lest we might forget, our little island was visited in 1896, I think, by a frost of some severity, and much damage was done. A great many beautiful trees and shrubs were destroyed, including our pet Eucalyptus. The present proprietor of the gardens has altered that once beautiful wilderness, and by the expenditure of some £10,000 has erected walls and large pockets for the reception of a certainly very comprehensive collection of rare and valuable plants. Waterworks and electric light, conservatories, and rustic bridges with no end of trellis work, will probably succeed in producing a grand *ensemble* in time, but we shall miss the scramble amongst the wilderness and the rough gems. *H. Becker.*"

Curatorship of Liverpool Botanic Gardens.—As we announced briefly last week it was decided at a meeting of the Liverpool Parks and Gardens Committee, held on April 25, to recommend the appointment of Mr. Walter Hackett, foreman of the Tropical Department at Kew, as Assistant Curator of the Liverpool Botanic Gardens. On the death of Mr. Henry Herbert, Chief Superintendent of Parks and Gardens, Mr. James Guttridge, Curator of the Botanic Gardens and Deputy Superintendent, was promoted, and now vacates his house there, to take up his residence at Sefton Park as Chief Superintendent and Curator of Parks and Gardens. The position of Deputy Superintendent is held by Mr. W. Street, of Newsham Park. Mr. Hackett is a frequent contributor to our pages, and we wish him every success in his new duties.

Changes at Kew.—In consequence of the above appointment of Mr. Hackett, Mr. C. P. Raffil will take over the care of the Tropical Department at Kew, while Mr. W. Taylor, formerly deputy foreman of the Tropical Department, will succeed Mr. Raffil in the Temperate House.

The Royal English Arboricultural Society.—The railway rate committee of this society has enquired into the subject of the charges of English railway companies for traffic in English timber, and it appears evident that the common rate is about 2½d. per ton, per mile, with addition for "terminal" services, and that there is throughout Britain a differentiation in favour of foreign timber. On the Continent, although there, native grown timber is of higher value than in England, the charges are much less. For greater distances, the disparity of rate, English and foreign is more marked. Such a disparity between British and Continental rates suggests the question, "Do these higher rates generally apply to all railway traffic in this country?" Apparently not, as the charges for carriage on corn, per ton, per mile, differ but little in British and Continental countries, therefore, it will be seen that the application of heavier rates throughout in Britain is not general. The committee has considered a case where timber with a cost of only 1s. per foot cube, required to bear a railway company's charge of 7d. per foot cube, to get it to the nearest market. The following is a simple instance in review of rates and their relation to value:—The rate from Paddington to Worcester on timber (English) value £2, tape over bark, 144 divisor, 23s. 6d. per ton; on grain, value say £10, 14s. 10d. per ton; on coke (Worcester to Paddington) value say £1, 5s. 9d. per ton; on foreign timber, deals, boards, battens, value say £14 14s. 10d. per ton. It will therefore be seen that the railway companies, method of approaching this subject is a disadvantageous one for the landowner or grower in this country. The report of the departmental committee on British Forestry, 1902, said that land quite capable of producing high-class timber employs only one shepherd per 1,000 acres, if used as sheep-run, whilst the same ground, if planted for timber-growing gives employment to at least 10 men per 1,000 acres. Perhaps in this connection of labour a greater benefit arises even than the actual wage, namely, the time when the labour is called for. Felling and planting are mainly winter occupations. Agricultural labour can therefore be profitably kept throughout the year, thus increasing the wage, whilst equalising and economising the employment. The native timber which is now coming into the market was planted at a time when timber possessed a much higher value than it does now. This was no doubt partly due to the duty on foreign timber, but the reduction in value has been principally on account of the competition of foreign timber, and the extra cost of hauling British. The general tariff of charges made by the railway companies was arranged at a time when native timber possessed a higher value; now that home products have become so reduced in price and the competition of foreign timber is so keen, it would appear necessary to reconsider and reduce the system of railway charges to meet the altered circumstances.

——The lately issued part of the *Transactions* of this Society contains a report of the twenty-fourth annual meeting, held in August, 1905, and of the subsequent excursion to Belgium. On that occasion the members visited the Liège Exhibition, certain woodlands in the Ardennes, the forest of Soignes, the woods of Chenoy, and near Ottignes 500 (*sic*) acres of glasshouses devoted to grape-growing. The domain of Tervueren was visited and the arboretum, under the charge of M. Bommer, was inspected. This consists of 75 acres given by the King for educational purposes; the trees are arranged according to their geographical origin. The forestry museum in the Brussels Botanic Garden was also visited. A very interesting statement is made as to the formation of an arboretum near Oxford on the model of that at Tervueren. About two thousand plants representing one hundred and fifty species of Conifers were presented by the Hon. Mark Rolle to the Society. There were, we presume, the specimens which excited so much attention at the first Park Royal Show. They were planted out at Engelfield Green on the Bagshot sand, and have since been transferred, through the liberality of Magdalen College, Oxford, to an oakwood at Tubney on deep sand. Mr. Elwes offers to contribute two hundred exotic trees, and Sir Hugh Beevor has presented some American Elms. This is a satisfactory beginning, and we hope that the example will be followed at Wisley, where a small arboretum for educational purposes might be established with advantage.

The Birmingham Botanic Gardens.—Visitors to the Midland Daffodil Show last week were loud in their praise of the condition of the Botanical Gardens. Considerable work has been done under the direction of Mr. Humphreys during the past winter in moving and replanting the Rhododendrons. The plants were formerly in large measure massed together in central groups with paths round them, and the alteration has consisted partly in removing them to either side and making a path through the centre. This work has necessitated minor additional alterations, which have tended to improve the general effect, and open up views where formerly they were only of the most limited description. The immediate portion around the Rhododendron garden has the appearance of being of less restricted area, and the well-made paths, with neat turf edgings, are a great improvement. Almost all the Rhododendrons, as well as hardy Azaleas, are unusually well furnished with flower buds. A much needed improvement has also been made at the entrance to the gardens. On the extensive rockery during the first day of the show there were many interesting plants in flower, particularly Primula rosea, P. denticulata, Aubrietia græca, etc.; Alyssums, Fritillaria Meleagris, and the variety alba, and Magnolia stellata. On the second day of the exhibition (Thursday), however, how everything was altered! Snow in great flakes fell during the greater part of the day, and eventually the rockery looked truly like an Alpine garden, some of the flowers being partially hidden by the covering of snow. The price paid for this effect, however, was the loss of the flowers, which had already opened. In the glass houses, as well as out of doors, there were indications of everything having been done to make the gardens attractive during the coming season.

Malformed Orchid.—Messrs. Sander, of Bruges, kindly send us a flower of Dendrobium Phalænopsis, presenting some peculiarities. The pedicel is flattened as if two were joined together, and the parts of the flower are the following:—Five sepals, normal; four petals, one lip-like; two lips and two columns. It would seem, then, that two flowers have become united. This being so there should be 14 parts to the flower; one part has been squeezed out of existence, probably one of the sepals, and one of the petals has assumed a lip-like character.

Flowers in Season.—Mr. W. E. Gumbleton, of Queenstown, Ireland, obligingly writes:—"Pittosporum eugenioides is now in flower. It does not bloom in a small state but a fine, tall specimen bush of some 15 feet high, in my next door neighbour's garden, commenced to bloom last year and is now covered with bunches of small yellow flowers on the apex of every branchlet. I received yesterday from a Cornish garden a fine bunch of flowers of the very rare, pure white form of the handsome Myosotidium nobile, the giant Forget-me-not of Chatham Island. I think it makes a charming companion to the ordinary form. The sender writes that he hopes it will come true from seed, but this, I should think, cannot be relied on, as it is probably a seedling albino which will revert. Some of my bunches of the new Wistaria multijuga rosea have been caught by late frost, but I hope three or four of them will open. My unique plant of the handsome Arctotis decurrens of Jacquin is now, for the fourth year, in great beauty with many flowers, but will not seed or give cuttings."

National Sweet Pea Society.—We are asked to state that Mr. Horace J. Wright, who has carried out the duties of Secretary to this society with much success during the past four years, has been compelled for personal reasons to resign his position. The committee accepted his resignation with much regret, and expressed its high appreciation of the work he has accomplished. The duties of Secretary will now devolve upon Mr. Charles H. Curtis, who has always been closely associated with Mr. H. J. Wright in the work of the society, and to him at Adelaide Road, Brentford, Middlesex, all communications should be addressed. Mr. H. J. Wright will act as a member of the Executive Committee.

Bacteria.—It is asserted by two Italian bacteriologists, Serafini and Arata, that harmful, disease-inducing bacteria are more abundant around than in forests. Useful bacteria feeding on dead matter are most plentiful in the forests, and no disease-producing bacteria have as yet been found in forest-soil according to some details quoted by Mr. Margerison in the *Transactions of the English Arboricultural Society*.

Royal Gardeners' Orphan Fund.—We would remind our readers that the eighteenth Annual Festival Dinner of the Royal Gardeners' Orphan Fund will take place on Thursday, May 10, in the Hotel Cecil, Strand, at 6.30 for 7 o'clock p.m. J. Gurney Fowler, Esq., treasurer of the Royal Horticultural Society, will preside, and it is confidently hoped that he will be supported by a large and representative company. The institution is doing much valuable work on behalf of gardeners' orphans, and the amount of the annual subscription being much smaller than it ought to be, there is need for making every effort to raise as large a sum as possible in connection with the annual festival. At the last election fewer than one-half of the candidates could be elected, and unless a larger revenue can be raised the same must happen again next year. Mr. Brian Wynne, secretary, 30, Wellington Street, Strand, will be pleased to hear from any of our readers who are willing to afford financial help or who can be present at the dinner. Donations may also be sent to any one of the following gentlemen who have kindly consented to act as stewards: W. R. Alderson, Hersham Road, Walton-on-Thames; Horner Ashe, Arundel Lodge Gardens, Ilkley; John Assbee, Market Office, Covent Garden, W.C.; W. Y. Baker, Thames Bank Iron Co., Upper Ground Street, S.E.; George H. Barr, 11, 12, 13, King Street, London, W.C.; W. Bates, J.P., Cross Deep, Twickenham, S.W.; William Bull, 536, King's Road, Chelsea, S.W.; G. Bunyard, V.M.H., The Royal Nurseries, Maidstone; G. Caselton, Garden Superintendent, Crystal Palace, S.E.; John Clayton, 12, Royal Arcade, Norwich; William H. Cutbush, The Nurseries, Barnet, Herts; George Cuthbert, The Nurseries, Southgate, N.; George H. Cuthbert, Ashleigh, Old Southgate, N.; C. Dixon, Holland House Gardens, Kensington, W.; F. C. Fear, Brynhyfryd, Portswood Road, Southampton; W. Harman, The Gardens, Newnham Paddox, Lutterworth; Edwin Hillier, 95, High Street, Winchester; W. Howe, Park Hill Gardens, Streatham Common, S.W.; D. Ingamells, 27, Catherine Street, Covent Garden, W.C.: T. K. Ingram, Parkstone Nurseries, Dorset; J. Lyne, Foxbury Gardens, Chislehurst, Kent; J. F. McLeod, Dover House Gardens, Roehampton; H. B. May, Dyson's Lane Nursery, Upper Edmonton; J. W. Moorman, The Lodge, Victoria Park, E.; T. A. Morris, 67-68, Cheapside, E.C.; Whitpaine Nutting, 106, Southwark Street, S.E.; R. Hooper Pearson, *Gardeners' Chronicle* Office, and 40, Brocklebank Road, Wandsworth, S.W.; W. Poupart, Marsh Farm, Twickenham; G. Reynolds, Gunnersbury Park Gardens, Acton, W.; Francis Robinson, Cathedral Street, Manchester; W. Roupell, Harvey Lodge, Roupell Park, S.W.; T. W. Sanders, 124, Embleton Road, Lewisham, S.E.; David W. Thomson, 113, George Street, Edinburgh; W. P. Thomson, 25, Bollo Lane, Chiswick, W.; Harry J. Veitch, V.M.H., 34, Redcliffe Gardens, London, S.W.; James Vert, Audley End Gardens, Saffron Walden; J. H. Witty, St. James's Villa, Swain's Lane, Highgate, N.; Godfrey Woodstock, Drury Lane House, Covent Garden, W.C.

Bulbous Flowers in the Birmingham Public Parks.—In the *Birmingham Daily Mail* for April 24 appeared an appreciative note on the flowering bulbs in the city parks, from which we make the following extracts:—The total number of bulbs of various kinds now coming up is no fewer than 133,400, which are distributed in 11 parks and open spaces. In Cannon Hill Park, which is, of course, the show place as regards flowers, there are 32,000—15,000 Tulips, 10,000 Narcissi, 4,000 each of Hyacinths and Crocuses, 2,000 each of Gladioli, Snowdrops, and Spanish Irises, and 1,000 each of Anemones, Winter Aconites and Liliums. The next largest number is to be seen at Summerfield Park, Dudley Road, where 20,800 bulbs are blooming. Here, again, the Tulips are in greatest profusion, with Narcissi nearly as numerous. Then comes Victoria Park, Small Heath, which has absorbed 19,600 of the bulbs for this year, Aston Park, with 12,800, and Calthorpe Park, Pershore Road, with 9,000 is next. There is a drop down to 4,500 at Queen's Park, Harborne, and the smallest number of all is devoted to Adderley Park, where 1,000 only were put in. It may be interesting to note that the Council House window boxes absorb 1,600 Tulips and 1,000 Crocuses. Thousands of Violas carpet the Tulip, Hyacinth, and Crocus beds, and Polyanthus are being tried in several of the parks this year with great success. One is sorry to miss the good old English Wallflower, but what is suitable to a garden will not always do well in large open spaces, and it has been found that the exposure to the cold winds which sweep across the parks is fatal to Wallflowers. The efforts of Mr. Morter, the superintendent of the Birmingham Parks, have been very successful, and the good condition of the parks generally is much appreciated.

Flowers in Season.—From Messrs. Dobbie & Co., Rothesay, we have received a selection of Violas and Pansies in named varieties, including some of the best kinds excellent in form and quality.

Japanese Larch.—At Bothalhaugh, near Morpeth, is a fine clump of Japanese Larch, considered by experts to be the largest and finest trees of their kind in the county.

British Gardeners' Association.—At the last meeting of the Executive Council of this association, held in the Royal Horticultural Hall, Westminster, Mr. R. Hooper Pearson in the chair, the Secretary reported that 21 new members had joined since the previous meeting, bringing the total membership up to 891. Arrangements were made for the annual general meeting, which is to be held at the Essex Hall, Essex Street, Strand (close to the Temple Gardens), on Wednesday, May 30, at 6-30 p.m., when a large attendance is anticipated.

Mr. William Denning, J.P.—Mr. Denning, of Heathfield Nursery, Hampton, has recently been appointed a County Magistrate. He began his career as a gardener at Grimston Park, near Tadcaster, about 1850. After some time spent at Kew, Tortworth Court, Patshull, and Bolton Hall, Bedale, he returned to Grimston in 1868 as head gardener to the late Lord Londesborough, in whose service he remained, there and at Norbiton, until he began business for himself about 1886. From the outset of his going to Hampton, Mr. Denning took an interest in the local government of the district. As time went on he filled various responsible offices in connection therewith, finally becoming chairman of the District Council, hence his qualification for the honour recently conferred upon him.

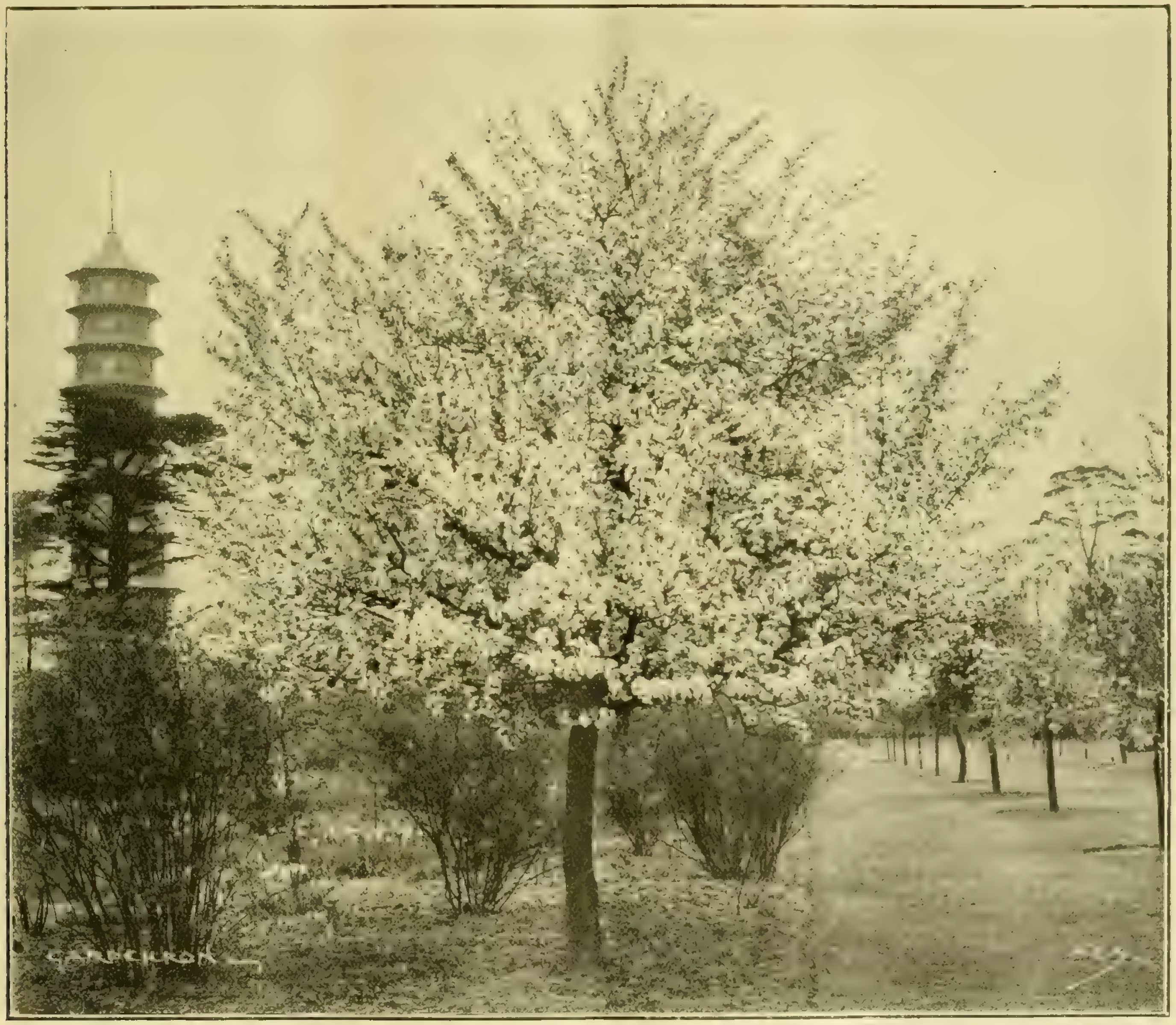
Fortunate Ventnor.—As a further reminder of the favourable character of the Ventnor climate, we have been sent a Lettuce plant which has been grown in the open ground by Mr. Cantalow, Grenville Cottage. The Lettuce is a perfectly-developed, full-sized plant of the Cabbage type, the variety probably being that excellent one known as "All the Year Round." Our correspondent states that in the same garden there are several hundred such plants in similar condition. With the Lettuce was a spray of Scabious in flower, and a nearly-developed flower of Souvenir de la Malmaison Carnation, also grown out of doors.

Publications Received.—*Bulletin of the Department of Agriculture, Jamaica.* March. Contents: Cultivation and marketing of Citrus fruits, H. G. Levy; Tobacco, &c.—*Annual Report of the Agricultural Experiment Stations of the Louisiana State University.*—U.S. Department of Agriculture, Farmers' Bulletins, No. 245. *Renovation of Worn-out Soils*, by W. J. Spillman; 247. *Control of the Codling Moth and Apple Scab*, C. L. Marlatt and W. A. Orton; 238. *Citrus Fruit Growing in the Gulf States*, by P. H. Rolfs.

TREES AND SHRUBS.

PYRUS SPECTABILIS.

Sixty years ago Loudon referred to this tree as "by far the most showy of all the different species of Pyrus." Perhaps one could not, with the same assurance, say the same to-day, for we now possess such fine Crabs as Pyrus floribunda atrosanguinea and P. Scheideckeri which Loudon never knew, and which possess a beauty as alluring as that of P. spectabilis. I have never seen an individual tree of any species, however, more beautiful than the specimen here figured (fig. 117) was at the time it was photographed. It represents P. spectabilis in the collection of species of Pyrus at Kew, and is about 20 feet high. Pyrus spectabilis is a native of China, and it was a happy thought of Mr. Wallis to include a glimpse of the Pagoda in the picture. The precise date of its introduction to Europe does not appear to be known, but Dr. Fothergill—one of the most famous arboriculturists of the eighteenth century—is credited with having been the first to cultivate it in this country. It was growing in his garden at Upton House, Stratford (in Essex), in 1780. At the time of flowering, which is from the middle of April to the second week of May, the tree has but scant foliage and the young leaves are sometimes almost hidden by the extraordinary profusion of blossom it bears. When fully grown the leaf is 2 to 3 inches long, ovate-oblong, glossy green, quite smooth, and shallowly toothed. In nearly all the large trees in cultivation the flowers are more or less double, that is the petals usually exceed in number the normal five. In the bud state they are of a deep rosy-red colour, but they become paler on expanding, although still retaining a lovely blush tint. The species is rather variable, and one of its best forms is that with large, well-coloured flowers known under the varietal name of Kaido. *W. J. Bean.*



[From a photograph by Mr. E. J. Wallis.]

Fig. 117.—Pyrus spectabilis flowering at Kew in the last week of April.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Lilium candidum (see pp. 233 and 251).—I enclose a seed-pod taken from one of the plants here last year. The plants are growing in a border facing to the south, in poor soil which is very dry. They have produced seeds on several occasions, and have not been hand fertilized, nor are there any other Lilies in the garden. Seedlings have been raised from similar seeds by Dr. Trow, of Cardiff University College, but they have not yet flowered. *H. Haddon, Gardener to J. J. Neale, Esq., Tynwood, Park Road, Penarth.*

Strawberries Injured.—I send you a few Strawberry fruits about which I would like your opinion. We get them almost ripened when they go off in the same manner as those enclosed, in about 24 hours. This is the first time I have experienced such injury to Strawberries, and I am anxious to know the cause. *F. W.* [The carpels or pips had evidently been removed by some small animal or insect, which had not greatly injured the fleshy receptacle. Have any of our other readers experienced similar trouble? Ed.]

Supporting Strawberries.—When visiting the gardens at Hatfield House some years ago I noticed every truss of fruit on the pot Strawberries suspended on small crutches, probably cut from old birch brooms, and I consider a method of growing Strawberries that was found to be practicable by the late Mr. George Norman could hardly be detrimental to size in the berries. Therefore, the raised wire hoops (see p. 267) would be beneficial. *F. G. Brewer, Bryntirion Garden, Bont Ddu, Dolgelly, Merionethshire.*

The Yellow-Flowered Saxifrages.—I should like to supplement the admirable notes on "Some Yellow-Flowered Saxifrages" which appeared in the *Gardeners' Chronicle* of April 21, pp. 249-50-51, by a reference to two new varieties of the Boydii class which are not yet generally known, and which are only now, I believe, being distributed. These are called "Faldonside" and "Cherry-trees," respectively from the names of the homes of Mr. W. B. Boyd and Mr. James Boyd, the latter the raiser of that beautiful Saxifrage, S. Boydii ×. Both differ in some respect, so far as colour is concerned, from that fine plant, but both have merits which entitle them to consideration.

The first, S. "Faldonside," may be described as a lighter yellow S. Boydii ×, but with larger and better formed flowers. While in depth of colouring it is inferior to S. Boydii ×, it is a really beautiful Saxifrage, and those who have seen a frame full of it, as the writer has done, will appreciate its beauty even more than those who have only seen a solitary small plant. The second, S. "Cherrytrees," is still lighter in colour, and may be described as of sulphur yellow, passing off to nearly white. It, again, is less effective than Boydii, but is also of pretty Saxifrage which is deserving of inclusion in a collection of the best Saxifrages of this type. I understand that these are both seedlings from S. Boydii ×. The foliage of these varieties is more like that of S. Boydii than is that of S. Boydii alba, which, it always appears to me, should not have been called by the name it has received, as it comes nearer to S. Burseriana than to S. Boydii ×. I may add that S. juniperifolia is not so easy of cultivation in some gardens as Mr. Jenkins has found it. I know some growers who can only keep it in health by covering it with a small bell-glass, tilted up on one side, during summer and winter. In other gardens, on the contrary, it grows easily, and I recently saw a very fine plant in good bloom (for this species) without any special care. In my present garden it promises to do much better than in my former one, where it required a good deal of care to keep it in health, as it needed there to be covered in the way already mentioned, while here it is fully exposed and is much healthier than any plants I previously had. I am now speaking of plants cultivated on the rockery and not in a frame. *S. Arnott, Sunnymead, Dumfries, Scotland.*

Independent Sectional Boilers.—With reference to Mr. Divers' note on these boilers on p. 188, I had two erected by Messrs. Foster & Pearson in 1903, the one a Robin Hood and the other a Mona boiler, in the place of two of the old saddle pattern. I find them a great improvement, being more economical, and furnishing heat quicker. On looking through my bills for fuel I find these two boilers have consumed 23 tons of fuel less than the older ones in a corresponding period, and, furthermore, I can maintain a suitable temperature with far less stoking than formerly. I may state that both the boilers are covered with asbestos. *C. A. Bayford, Shugborough, Stafford.*

Prunus Pissardi.—Since acquainting the Rev. David R. Williamson with the fruiting of Prunus Pissardi at St. Mary's Isle, I have learned of two other places in the south of Scotland where it fruits. These are Munches, near Dalbeattie, well-known to the readers of the *Gardeners' Chronicle* as the estate of the late Mr. W. H. Maxwell, of Munches, an occasional contributor to its pages, and now belonging to his son, Mr. W. J. Herries Maxwell, late member of Parliament for Dumfriesshire; and The Grove, 3 miles from Dumfries, the property of Mr. Hyslop Maxwell. In both of these gardens it has fruited, but at The Grove the fruit is seldom allowed to ripen on account of the birds eating it. Munches is in a rather mild district not far from the sea, but The Grove is further inland and in a cold district, and one in which 23° of frost were registered last March. *S. Arnott.* [It fruits not uncommonly in the South.—Ed.]

Rhododendron mundulum.—I do not know this Rhododendron, but from Mr. Arnott's description I suppose it is one of the first set of hybrids which were raised from R. arboreum, R. caucasicum, and R. catawbiense. These were the three first species to be used for hybridising, and from these we have Nobleanum ×, altaclarense ×, Russellianum ×, Russellianum superbum ×, Londinense ×, Lefebvreanum ×, &c., inclining most to R. arboreum, and Jacksoni, venustum ×, Waterer's caucasicum, &c., more approaching R. caucasicum. The catawbiense blood does not appear very strongly in the older hybrids, except in the magenta or lilac tint of the flowers, and in the general hardiness of the plants. With those varieties that received names there were many others which were not named at the time, and these old plants—many of them early-flowering and also very handsome—are to be found in many parts of the country, notably in Devon and Cornwall, in South Wales, at Kew, and in some parts of Ireland. There are several here, but as we suffer badly from spring frosts we do not often see them to perfection, although elsewhere they are well worth growing in sheltered places. Besides those varieties that flower in February and March there are several that bloom in April and May which are first-class in colour and habit, and are not so liable to injury by frost. Of these Ascot Brilliant, a hybrid from R. Thomsoni, with bright scarlet, semi-tubular flowers; Sun of Austerlitz, scarlet; Prince Camille de Rohan, rosy-pink; Grand Arab, crimson; Broughtoni, rosy-crimson; and Jacksoni, bright pink, may be recommended as being good growers and very free bloomers. There are others which are equally good, but the above are given as a selection likely to suit the most fastidious. *J. Clark, Bagshot, Surrey.*

SOCIETIES.

ROYAL HORTICULTURAL.

May 1.—There was a very good display of exhibits in the Royal Horticultural Hall on Tuesday last, which was "May Day," and the show was visited by a very large number of Fellows. Orchids, as usual, formed a very important part of the exhibition, and the Committee charged with the inspection of these plants awarded to novelties one First-Class Certificate, four Awards of Merit, and one Botanical Certificate.

There appeared to be rather fewer good novelties before the Floral Committee than usual, the only awards made being two Awards of Merit, one to Carnation "H. Elliott" and one to Pelargonium Clorinda. A very remarkable collection of Auricula plants in pots from Mr. Jas. Douglas was awarded a gold medal.

The Fruit and Vegetable Committee had merely to inspect some very fine Strawberry fruits from W. M. Bullivant, Esq., Beckenham. (Silver Banksian Medal.)

The Narcissus Committee recommended awards which included one First-Class Certificate, three Awards of Merit, and one Botanical Certificate.

In the afternoon there was a lecture by Mr. Edward Mawley on "Phenology as an Aid to Horticulture."

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. G. H. Barr, Jno. Green, T. W. Turner, C. J. Salter, Chas. Jeffries, Chas. Dixon, Jas. Douglas, C. E. Pearson, C. E. Shea, W. Thompson, E. H. Jenkins, W. Cuthbertson, M. J. James, Geo. Paul, R. Hooper Pearson, W. Howe, C. R. Fielder, C. Blick, J. Jennings, J. Hudson, Geo. Gordon, C. T. Druery, and H. J. Cutbush.

Messrs. R. & G. Cuthbert, Southgate Nurseries, Middlesex, staged a large batch of Azaleas, of both pontica and mollis varieties; a specimen of the beautiful Pink Pearl Rhododendron; a number of zonal and ivy-leaved Pelargoniums; and some delightful small plants of Weigela Eva Rathke. These last-named were not more than 18 inches high, but they were crowded with their pleasing flowers. (Silver Flora Medal.)

Sir Samuel Scott, Westbury Manor, Brackley (gr. Mr. F. Tapper), contributed a very nice display of Carnations. Both tree and Souvenir de la Malmaison varieties were included, a Bamboo epergne filled with the latter being exceptionally good. The yellow Cecilia was also shown well. (Silver Flora Medal.)

The Hon. Walter Rothschild, Tring Park, Tring (gr. Mr. Arthur Dye), showed a batch of Gloriosas, among which one growing in a pan had much finer and brighter flowers than the remaining specimens, the foliage also appearing broader and of a paler colour. This was labelled G. Rothschildiana, of which we presented a description and illustration in our issue for May 23, 1903. (Silver Flora Medal.)

Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea, staged a batch of blue and rose-coloured Hydrangeas, plants of Medinilla magnifica, Tillandsia Lindeni, and Epiphyllum Gaertneri in flower. (Silver Banksian Medal.)

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, showed many varieties of zonal Pelargoniums, the pots being hidden among a wealth of choice Ferns; also plants of Statice profusa, Ixoras, herbaceous Calceolarias, and some Pansies and Violas. (Silver Banksian Medal.)

Messrs. Hugh Low & Co., Bush Hill Park, Middlesex, staged a collection of miscellaneous greenhouse plants. We noticed a nice specimen plant of the old Brachysema Drummondi, whose scarlet papilionaceous flowers are produced in twos and threes in the leaf axils.

Messrs. Low also staged a fine pan of the yellow Auricula "Queen Alexandra," a batch of the floriferous Schizanthus Wisetonensis, and many beautiful Carnations and Roses. (Silver Flora Medal.)

Messrs. Paul & Sons, the Old Nurseries, Cheshunt, displayed several interesting plants and inflorescences. They had a specimen of the white or pale-yellow fruited Aucuba, a plant of Escallonia Philippiana, Ceanothus punctata, Quercus Daimio, with handsome Fig-like foliage, Berberis stenophylla ×, Amelanchier asiatica, Roses, Rhododendrons, &c.—a very interesting collection.

Messrs. H. Cannell & Sons, Swanley, Kent, again made a brilliant display with trusses of zonal Pelargoniums, and they had, in addition, bunches of the show type. Adjoining the Pelargoniums were flowers of gorgeous varieties of Phyllocacti, and a batch of the neat little rose-coloured P. phyllanthoides "German Empress." Messrs. Cannell also presented a dozen trained Roses, of such varieties as François Foucard, L'Ideal, Philadelphia Rambler, Paul Transon, &c., all of which were covered with a wealth of flowers. (Silver Gilt Banksian Medal.)

Messrs. Wm. Paul & Son, Waltham Cross, Herts, brought some beautiful new Rambler Roses. One named Wedding Bells bears some resemblance to Lady Gay and the charming Trier, whose white flowers hang in dense clusters. Then there were also seen the new H. T. Warrior, with charming buds of scarlet-rose colour, the bronze Crepuscule, and others. Pyrus Scheideckeri, resembling plumes of flowers, and the larger-flowered P. Malus angustifolia completed a pretty group. (Silver Banksian Medal.)

Mr. L. R. Russell, Richmond, staged a charming group of plants in one corner of the Hall. At the background was a tall plant of the double Gorse, and below some plants of Philadelphus Boule d'Argent that were literally wreaths of blossom, and in the foreground and around were nice specimens of Clematis. Adjoining the group were three baskets of coloured Dracænas, the variety superba being very handsome.

W. M. Cazalet, Esq., Fairlawn, Tonbridge (gr. Mr. F. Cubberley, displayed trusses of hardy Rhododendrons, principally hybrids of R. ponticum and R. arboreum, in many shades of colours.

Messrs. W. & J. Brown, Stamford and Peterborough, showed Verbenas Scarlet King and Miss Willmott, Heliotrope, Cactus-flowered Pelargoniums, Aubrietias, &c.

Mr. A. R. Upton, the Guildford Hardy Plant Nursery, Millmead, Guildford, showed pans of miscellaneous rock-garden plants—Daphne Fioniana, Euphorbia polychroma, some neat little plants of Phlox canadensis, flowering profusely, and several other plants of merit.

Messrs. Thos. S. Ware, Ltd., Feltham, Middlesex, showed Alpine and hardy plants in plenty. Several pans of Primula Sieboldi, in many varying colours, Sarracenia rubra, S. Drummondi, S. flava, together with Irises, Aubrietias, Gentians, &c., all contributed to a good display.

A bank of colour was seen in the batch of Cinerarias staged by Mr. A. Ll. Gwillim, Cambria Nursery, New Eltham, Kent, all of which were of the stellata or star type. (Silver Banksian Medal.)

Messrs. Dobbie & Co., Rothesay and Marks Tey, again displayed a collection of Violas and Pansies as at the last meeting. The exhibit demonstrated the excellence of the strain of these useful bedding subjects. (Silver Banksian Medal.)

Mr. Henry Eckford, Wem, Shropshire, displayed vases of Sweet Peas, obviously grown under glass.

Mr. Robert Sydenham, Tenby Street, Birmingham, also displayed vases of Sweet Peas and some well-grown Tulips and Lily of the Valley, grown solely in moss fibre, and the pots were without means of drainage.

Mr. James Douglas, Edenside, Great Bookham, Surrey, showed a batch of Auriculas that may truly be described as magnificent; indeed, we doubt if the display has before been equalled, much less excelled. When we mention that over 300 plants were shown, and each a perfect specimen of its type, some idea will be gained of the beauty of the exhibit. The varieties were about equally divided between the show and Alpine sections, and these again were represented by the most famous kinds in the various colours and classes. Thus there were seen the beautiful Thetis, with richest of purple shades, Duke of York, Rosy Morn, Ziska, Zingara, and Urania, all of the Alpine section, each worthy a description which considerations of space alone forbid; also the very best of the show Auriculas, such as the grey-edged Olympus and Marmion, Abbé Listz (prince among green edges), the beautiful Ruby (a "self" of high quality), Heatherbell, and a host of other worthy flowers. (Gold Medal.)

Some good Auriculas were also shown by E. A. Hambro, Esq., Hayes Place, Hayes, Kent (gr. J. Grandfield), together with a meritorious display of hardy plants. Mention must also be made of the Polyanthus, Gentiana verna (very fine), Orchis fusca (well-grown plants), Polemonium confertum, &c. Adjoining the hardy plants the same exhibitor staged two dozen specimens of Begonia Royalty, a variety of rather lax habit, and with a tendency to become drawn. (Silver Gilt Banksian Medal.)

The Misses Hopkins, Mere, Knutsford, showed a small selection of Alpine plants, among which we noticed the charming rose-coloured Daisy Alice and a number of bedding Auriculas.

Messrs. Peed & Son, West Norwood, had a number of Gloxinia flowers, herbaceous and Alpine flowers, Auriculas, Calla Elliottiana, large flowering Clematis, Pansies, etc., set off by a number of ornamental Maples.

Mr. G. Reuthe, Fox Hill Hardy Plant Nursery, Keston, Kent, had a group full of interesting plants. Much space was occupied with inflorescences of Rhododendrons; the yellow Edwardsia microphylla, Bongardia Rauwolfi, a Berberidaceous plant with anthers that show the usual valvate dehiscence, Pinus parviflora but 18 inches high, yet carrying a whorl of its tiny cones, Lervisea Tweedyi, and Daffodils, Auriculas, Tulips, and similar spring flowers. (Silver Banksian Medal.)

Messrs. Thos. Cripps & Son, Tunbridge Wells Nurseries, Kent, staged a group of large flowering Clematis in a setting of ornamental Maples. The claret-coloured Clematis Ville de Lyon and the large-flowered C. Symeana deserve a word of mention, although the collection of these flowers was generally good.

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, staged a small collection of Alpines and a pan of their new bedding Pansy Mark Mills.

Mr. Amos Perry, Winchmore Hill, and Enfield, Middlesex, showed Phlox pilosa, P. Nelsoni, P. canadensis, etc., and a fine selected form of Campanula persicifolia alba.

Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, staged a small but good collection of Alpine plants and sprays of shrubs suitable for the rock garden. Some well-grown plants of Auricula Golden Queen were noticed.

Messrs. G. & A. Clark, Ltd., the Nurseries, Dover, showed a few boxes of rock garden subjects and vases of hardy flowers.

Mr. H. Elliott, Hassocks Nurseries, Sussex, displayed a small stand of American or winter-flowering Carnations, including Elliott's Queen of England, Florence Wooller, and other new varieties.

Mr. A. F. Dutton, Iver, Bucks, staged a group of Carnations in the style for which this grower is famed—Mrs. Thos. Lawson, Enchantress, Nelson Fisher, Floriana, Lieut. Perry (white), and many others of notable varieties. (Silver Gilt Banksian Medal).

Mr. N. Lowes, the Perennial Nurseries, Leversdown, Bridgwater, displayed a collection of St. Brigid Anemones, similar to those displayed by him at the last meeting.

AWARDS OF MERIT.

Carnation H. Elliott.—A first-class decorative English-raised tree Carnation, with flowers 4 inches or more across, having fimbriated petals of rich rose colour, very fragrant. The stems are rather less strong than are required by the large flowers, but the calyces are not weak, for they remain in good condition when the petals have been liberated. Shown by Mr. H. Elliott, Hassocks Nurseries, Sussex.

Pelargonium Clorinda.—This is a hybrid raised by Dr. Bonavia from seeds of P. quercifolium which had been crossed with some other variety. Judging from the habit and construction of the plant, it may be regarded as a hybrid between P. quercifolium and the zonal leaved section. It is a thoroughly good decorative plant, and fragrant. (See supplementary illustration to *Gardeners' Chronicle* April 15th, 1905.) Shown by Messrs. H. Cannell & Sons.

Narcissus Committee.

Present: Mr. H. B. May (Chairman), and Messrs. A. Kingsmill, J. T. Bennett-Poe, W. F. M. Copeland, P. Rudolph Barr, G. H. Engleheart (Rev.), W. T. Ware, R. W. Wallace, W. Goldring, J. D. Pearson, E. A. Bowles, A. M. Wilson, R. Sydenham, E. Willmott, Jas. Walker, W. Poupart, C. T. Digby, G. Reuthe, G. W. Leak, Joseph Jacob (Rev.), John Hoog (Haarlem, visitor), W .W. Fowler, and C. H. Curtis (Hon. Sec.).

The committee unanimously awarded a Gold Medal for an exceedingly good exhibit of Narcissus flowers from Miss Willmott, V.M.H., Warley, Essex. Miss Willmott has shown many similar exhibits in previous seasons, and on one or several occasions has obtained the Society's Gold Medal, but it was the general opinion that in the quality of the varieties shown and in the condition of the flowers this recent exhibit excelled the others. Some of the most beautiful and effective varieties included those following:—Warley Scarlet, Lemon Queen, Glory of Leiden, Oriflamme, Firefly (extra fine), Mars, Firebrand, Cernuus plenus, Great Warley, Will Scarlett, Moonray, Lucifer, Occident, Lilian, Seabird, Bianca (having a white Eucharis-like perianth, and clear yellow cup), Watchfire, Weardale Perfection, Furstin Maria Gettinger, &c.

Mr. A. M. Wilson, East Keal, Spilsby, Lincoln, showed a group of flowers of late Tulips, remarkable for their large size, and flowers of select varieties of Narcissus. Some of the choicest were Cassandra, Juliet, Horace, Almira, Concord, White Lady, and Eoster, which obtained an Award of Merit. (Silver Gilt Banksian Medal.)

Messrs. Barr & Sons, King Street, Covent Garden, London, W.C., exhibited a group of Narcissus and Tulip flowers, which included Masterpiece (see Awards) and Princess, a charming variety, white or pale lemon-coloured, with frilled trumpet (see note on Messrs. Barr's nursery on p. 277.)

Messrs. W. Bull & Sons, King's Road Nursery, Chelsea, exhibited late-flowering Tulips.

Messrs. R. H. Bath, Ltd., Wisbech, exhibited a collection of Narcissus flowers and Tulips, which included a pretty Narcissus named Princess Ena (see Awards). (Silver Banksian Medal.) (See p. 277.)

The Hon. Mrs. Chichester, Wexford, was awarded a Bronze Banksian Medal for a few good Tulip flowers.

AWARDS.

Narcissus "Eoster."—An incomparabilis variety certificated at Birmingham on April 25th (see ante page 271), where the name was printed "Easter." Shown by Mr. A. M. Wilson.

N. Masterpiece.—A very finely formed flower of the Parvi Coronati section, also certificated at Birmingham (see p. 271). Shown by Messrs. Barr & Sons.

N. Princess Ena.—This is a trumpet Daffodil, with long, very slightly fimbriated yellow trumpet, and regular, not large perianth of sulphur white. Shown by Messrs. R. H. Bath, Ltd.

Tulipa Fosteriana.—This very handsome and brilliant Tulip was shown by Mr. Van Tubergen, Junr., Haarlem, Holland. The flower is of large size, brilliant red colour, with yellow base. The segments are large and rounded at apex. (First-Class Certificate.)

Tulipa Greigi alba.—This variety also was shown by Mr. Van Tubergen, Junr. Each segment of the flowers had margins of white. (Botanical Certificate.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), Messrs. Jas. O'Brien (Hon. Secretary), De B. Crawshay, Harry J. Veitch, H. Little, W. Boxall, Francis Wellesley, R. G. Thwaites, W. Cobb, H. G. Morris, F. Sander, F. Menteith Ogilvie, G. F. Moore, H. A. Tracy, J. Wilson Potter, F. J. Thorne, T. W. Bond, A. Dye, H. T. Pitt, J. Charlesworth, H. Ballantine, W. H. White, W. H. Young, W. A. Bilney, R. Brooman-White, and Norman C. Cookson.

Leopold de Rothschild, Esq., Gunnersbury Park, Acton (gr. Mr. G. Reynolds), was awarded a Silver Gilt Flora Medal for a very fine group of Vanda teres composed of a large number of plants massed together each about 2 to 3 feet in height, and bearing numerous spikes of bright rose flowers. So grown it is one of the finest of Orchids, and at Gunnersbury Park it is to be relied on for a great show of bloom annually.

Messrs. Charlesworth & Co., Heaton, Bradford, secured a Silver Gilt Flora Medal for a fine group of hybrid Cattleyas, Lælio-Cattleyas, Odontoglossums, &c. Remarkably showy were specimens of Cattleya Empress Frederick, C. Wm. Murray, Brasso-Cattleya Digbyano-Mossiæ, B.-C. Digbyano-Warscewiczii, and the fine pure white B.-C. Queen Alexandra. Yellow colouring was given by a batch of Lælio-Cattleya Mercia, and a very finely-coloured L.-C. G. S. Ball. Bright rose and purple tints were seen on good varieties of Lælio-Cattleya Hyeana and L.-C. callistoglossa, the centre being of Oncidium Marshallianum of a good type. Odontoglossum crispum included several spotted forms and home-raised hybrids, two very dissimilar varieties of O. Othello (crispo-Harryanum × Adrianæ), the one with a very large cream-white flower blotched with purple, and the other pale yellow, with claret markings. Of interesting species noted were Masdevallia triaristella, Cirrhopetalum Cumingii, Cœlogyne Parishii, &c. Of singular hybrids were a cross between Lælia tenebrosa and Epidendrum prismatocarpum, and Epi-Lælia Laucheana (L. purpurata × E. atropurpurea).

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), was awarded a Silver Flora Medal for a nice group of excellently grown Orchids. The centre was of Phalænopsis Rimestadtiana, Cymbidium Devonianum with seven spikes, some fine examples of Cypripedium niveum, and C. bellatulum, a remarkably fine C. Mastersianum, and the large-flowered C. W. H. Young (barbatum × Curtisii). Other well-flowered plants noted were Lælia Boothiana, Zygo-colax Veitchii, a nice selection of Odontoglossum crispum and other Odontoglossums, a number of good forms of Cypripedium, &c.

Messrs. Sander & Sons, St. Albans, secured a Silver Flora Medal for a varied group of good things, the most remarkable among the several good Odontoglossums being a very fine blotched O. crispum of the best type with equally broad sepals and petals very heavily blotched with purple —a very good and promising variety. The hybrids included a very finely-coloured Lælio-Cattleya Henry Greenwood, dark L.-C. bletchleyensis, L.-C. callistoglossa, &c., and the species Cattleya intermedia alba, a fine C. Loddigesii, Dendrobium Bancroftianum, D. Jamesianum, Bulbophyllum mandibulare, several Megacliniums, Cirrhopetalums, &c.; Renanthera Imschootiana, Aerides Micholitzii, the large yellow Oncidium Marshallianum splendens, and others. A spike of the very remarkable Vanda suavis Sanderæ with pure white flowers, the spotting instead of being of the usual brown tint, being of a light greenish yellow, probably the first recorded albino in the species.

Messrs. James Cypher & Sons, Cheltenham, were voted a Silver Flora Medal for a very bright group, prominent in which were excellent examples of the best, large-flowered type of Miltonia vexillaria and Odontoglossum crispum, one variety of the typical white form having very large and finely-developed flowers, and several of them being spotted varieties. In the group were good examples of most of the Cattleyas of the season, Lælia Boothiana, L. purpurata, Brasso-Cattleya Digbyano-Mossiæ, Dendrobium Nestor, Lælio-Cattleya Hyeana, L.-C. highburyensis, Cypripedium grande, C. niveum, Cattleya Mendeli (one form having a singular parti-coloured lip), Masdevallia Heathii, &c.

Messrs. Hugh Low & Co., Enfield, received a Silver Flora Medal for a group, in the centre of which was a specimen of Dendrobium Wardianum with over 100 flowers, other Burmese Dendrobiums being arranged round it. An effective feature in the group was made by a very fine selection of Cattleya Schroderæ, including a strong plant of the pure white variety. Cypripedium niveum, C. microchilum, C. Graceæ, C. Gowerianium, Burkinshaw's variety, Cattleya intermedia alba, and others were also remarked.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), staged a group of rare and finely flowered species and hybrids, for which a Silver Banksian Medal was awarded. The group included the original plant of Dendrobium formoso-Lowii, still in fine health and well bloomed; a nice specimen of D. Dalhou-nobile, Brasso-Cattleya nivalis (with a good head of white fragrant flowers), B.-C. Digbyano-Schroderæ, Masdevallia Rushtoni, the fine M. ignea, Burford variety, and the singular Cattleya intermedia Aquiii (with peloric flowers showing the colouring of the lip on the petals), &c.

The Honourable Walter Rothschild, M.P., Tring Park (gr. Mr. Arthur Dye), was awarded a Silver Banksian Medal for an interesting collection of Masdevallias, many of them with small insect-like flowers. Among them were M. Chestertoni with purple-spotted perianth and large singularly constructed whitish labellum, veined with orange; M. Curlei, M. Reichenbachiana, M. bella, M. Schlimii, M. triangularis, M. simula, M. O'Brieniana, M. Wendlandi, M. leontoglossa, M. Burfordiensis, M. xantho corys; M. demissa, and a curious Brazilian species nearest to M. infracta purpurea in colour, and several hybrids. Mr. Rothschild also showed good Lælio-Cattleya Hyeana with six flowers, L.-C. Lucia with a long spike of orange-tinted blooms, and Houlletia odoratissima.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), was voted a Silver Banksian Medal and Cultural Commendation for a pretty little group of splendidly grown good varieties of Cypripedium bellatulum, C. niveum, C. concolor, and some hybrids, several of the plants in the group also gaining Diplomas in the class for special Orchids of the day.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), secured a Silver Banksian Medal for a small group of superb varieties of Odontoglossum crispum, all grown to the highest state of perfection. His beautiful large-flowered O. crispum Venus again secured the First Diploma as it has withstood the test of two competitions, White Empress, scarcely less beautiful, coming second. Other fine forms were O. c. Mrs. de Barri Crawshay (a charming flower), O. c. Lady Buchan, O. luteo-purpureum Mossi, and O. Coradinei Crawshayanum.

Messrs. Stanley & Co., Southgate, showed a group of Cattleya Mossiæ, Odontoglossum crispum, O. Adrianæ, O. Pescatorei, &c.

The Honourable Evelyn Cecil (gr. Mr. Cox) showed Lissochilus Krebsii from Rhodesia.

Sydney Jackson, Esq., Bexley (gr. Mr. Boyd), sent Odontoglossum crispum magnificum, a fine white flower.

Baron Sir H. Schroeder, The Dell, Egham (gr. Mr. Ballantine), showed some very finely-grown Odontoglossums, including the beautiful O. crispo-Harryanum "Duchess of York," the distinct O. Coradinei mirabile, a very large and heavily flowered plant of O. triumphans, "The Dell variety" (Cultural Commendation), &c.

H. S. Goodson, Esq. Fairlawn, Putney (gr. Mr. G. Day), sent Cymbidium, Lowio-eburneum giganteum, Phaius Norman, "Goodson's variety" (a very fine form), and Cattleya Schroderæ "Lily Blanche."

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), showed Cattleya Unique (Mendeli × Schroderæ).

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed Cymbidium insigne, a variety near to that previously shown as C. Schroderianum and C. Wilsoni and like a dwarf, light-coloured, indistinctly marked C. giganteum.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), showed Odontoglossum crispum Eustace, a richly-coloured flower near to to O. c. Ashworthianum and O. c. Franz Masereel, and which secured a First Diploma as a spotted crispum.

AWARDS.

First-Class Certificates.

Arachnanthe annamensis, from the Royal Botanic Gardens, Glasnevin, Dublin. A beautiful and large-flowered species introduced from Annam by Messrs. Sander & Son, and flowered last year by F. W. Moore, Esq., at Glasnevin, who now again exhibited it. The nearly equal sepals and petals are yellow, evenly barred and blotched with red-brown, the singularly formed labellum whitish marked with purple.

Awards of Merit.

Chysis Sedeni × (Limminghii × bractescens), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A pretty hybrid raised some years ago by Messrs. Jas. Veitch & Sons. Flowers white, tipped with rose, wax-like in substance.

Masdevallia ignea. "*Burford variety,*" from Sir Trevor Lawrence, Bart. A very large and handsome variety with yellowish flowers, tinged with salmon-red.

Cypripedium Rothschildianum, "*Northaw variety,*" from J. B. Joel, Esq., Northaw, Potter's Bar. A very large variety, of which the fine specimen has been previously shown.

Cymbidium Colmanæ × (eburneo-Lowianum × eburneum Dayanum), from Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound). A reversion towards C. eburneum. Flowers ivory white, with faint purple markings. In form nearest to C. eburneo-Lowianum.

Botanical Certificate.

Epidendrum odoratissimum, from Sir Trevor Lawrence, Bart. Inflorescence branched. Flowers creamy white, with a few purple markings on the lip.

Diploma Awards.

Odontoglossum crispum (typical). *First Diploma.*—O. crispum Venus. *Second Diploma.*—White Empress. Both from De B. Crawshay, Esq.

Odontoglossum crispum (spotted). *First Diploma.*—Eustace, from Norman C. Cookson, Esq. *Second Diploma.*—Raymond Crawshay, from De B. Crawshay, Esq.

O. luteo-purpureum. *First Diploma.*—"Mossii," from De B. Crawshay, Esq. *Second Diploma.*—"Sceptrum," The Dell variety, from Baron Schroeder.

Cypripedium bellatulum. *First Diploma.*—"Exhims variety," from J. Forster Alcock, Esq., Exhims, Berkhamstead. A grand form with very dark purple blotches and tinge on sepals. *Second Diploma.*—Wellesleyanum, from Francis Wellesley, Esq.

Cypripedium niveum. *First Diploma.*—"The Premier." a very fine flower, from Francis Wellesley, Esq. *Second Diploma.*—"Purity," from Jeremiah Colman, Esq.

Cypripedium concolor. *Second Diploma.*—"Sanderæ Westfield variety," from Francis Wellesley, Esq.

HORTICULTURAL CLUB.

"PARASITISM."

May 1.—After the usual monthly dinner of this club, held at the Hotel Windsor on the above date, under the presidency of Sir John Llewellyn, Bart., and with a very full attendance of members and guests, Professor J. B. Farmer, M.A., F.R.S., gave a most interesting address on "Parasitism" in especial connection with the plant world, humorously opening his remarks with the reminder that we are all of us parasites on plants in the sense that we depend directly or indirectly entirely upon them for our existence. He commenced by dividing plant parasites into two categories, saprophytes, which feed upon vegetable matter already dead, and parasites proper, which select living hosts whom they rob in a more or less drastic and unconscionable fashion. The familiar examples of the Dodder and the Mistletoe were quoted here, the former being much more unscrupulous than the latter, which appears to occupy a sort of intermediate position by forming a working foliage of its own, and not depending entirely on the host, as is the Dodder. A peculiar point in this connection was that the more thorough the parasitic nature, the more degenerate it became, tending at last to do nothing more than reproduce itself, i.e., to become flowers and nothing else. Rafflesia Arnoldi, with huge earth-borne flowers a yard across, has apparently reached the climax in this respect, as it has no leaves at all, and even the roots are mere feeders and suckers upon the roots of surrounding vegetation. Despite the two distinct categories aforesaid, saprophytes and parasites proper, there is, of course, as always occurs in nature, an intermediate grade, and in this we find instances where the organism usually destined to prey on dead matter steps, as it were, over the line and attacks the living in an insidious fashion by previously poisoning the adjacent tissues and thus killing them first and feeding on them afterwards, so, as it were, to save its harmless saprophytic character under false pretences. Professor Farmer then dealt with that aspect of parasitism which involves a benefit to both the parasite and the host, as we see exemplified in the bacteria of the soil which induce the growth of nodules on the roots of many leguminous plants and in some occult way introduce from the nitrogen in the air a considerable addition of nutritious nitrates to the soil, to the benefit of the farmer as well as the host and parasite. The next thing considered was, what was the inducing cause of parasitism? And in this connection the attractive power of sugar and malic acid was an undoubted factor, parasitic plants, like non-parasitic ones, having the faculty of discovering and following up the track of what they like; thus in the fertilisation of Ferns it is the presence of malic acid in the archegonium which determines the course of the swimming antherozoids towards it, and it is the same powerful attraction which has been inherited by flowering plants, and determines the course of the pollen grain contents to the ovary. It is due to this that pollen grains germinate on gelatine. The various rusts which infect Wheat and other cereals were then alluded to, and the immunity of some varieties and susceptibility to infection of others, it was suggested, might both be due to differences of a subtly chemical character, attractive or unattractive, as the case might be, since it had been shown by experiment that sugar might attract or repel according to the greater or less amount present. The curiously intricate life history of some of this class, involving two different alternate hosts, such as the Barberry and Wheat, was entered into, as also was the destructive effect of some of the larger fungi on trees, especially Conifers. In the subsequent discussion, Sir George Watt gave some most interesting particulars respecting the parasites incidental to the Indian Tea plantation, and Colonel Prain, the new Director of Kew Gardens, followed with some appreciative remarks on the value of Professor Farmer's observations.

BECKENHAM HORTICULTURAL.

March 30.—The members of this society met for the last time this session, on the above date, to hear Mr. A. Dean, V.M.H., lecture on "Potatos." Mr. R. Murray-Hyslop, B.U.D.C., presided. Mr. Dean's lecture was certainly one of the most useful ever given before the members, and will long be remembered by them. A dozen of the best varieties of Potatos recommended included (early) Duke of York, May Queen; (second early) Snowdrop, Sir J. Llewellyn, Windsor Castle, British Queen; (main crop) Up to Date, Factor, Duchess of Cornwall, Dalmeny Beauty, Peckover, and Superlative. *R. W. F.*

LINNEAN SOCIETY OF LONDON.

April 5.—Dr. A. Smith Woodward, F.R.S., Vice-President, in the chair.

Mr. Clement Reid, F.R.S., exhibited nearly 50 photographs, entitled "Some Plants new to the Preglacial Flora of Great Britain." He explained that these were derived from material procured at Pakefield, near Lowestoft. On a former occasion (April 21, 1904) he had shown a series of drawings from the fruits obtained by breaking up the matrix, and selecting the liberated specimens; but this process was unsatisfactory, and he had, therefore, resorted to photography. The remains were black, and therefore troublesome to photograph, but the specimens themselves could not long be preserved, as an efflorescence occurred, and they fell to pieces, but experiments were now being conducted with a view of permeating the fruits with paraffin, and so ensuring their preservation.

Mr. Spencer Moore, F.L.S., contributed a Paper, "A Second Contribution to the Flora of Africa: Rubiaceæ, and Compositæ Part II."

The second paper was by Mr. E. J. Schwartz, F.L.S., on "The Structure of the Stem and Leaf of Nuytsia floribunda, R. Br.," which was illustrated by lantern-slides.

The last paper was by Mr. B. Hayata, communicated by Dr. Maxwell T. Masters, F.R.S., F.L.S., "On Taiwanites, a new genus of Coniferæ from the Island of Formosa."

Dr. Masters considers the genus a valid one, judging from a small scrap which he had received from the author, who believed his new genus to be intermediate between Cryptomeria and Cunninghamia; Dr. Masters pointed out that it combined the foliage of Athrotaxis with the cone of Tsuga and that in any case it is a most interesting genus.

DUTCH HORTICULTURAL AND BOTANICAL.

April 11.—At a meeting held on this date, certificates of merit were awarded to Dendrobium Wardianum, variety Foresta, sent by Mr. M. C. Macke, Baarn (gr. Mr. Th. Hendriksen). The flowers are particularly large in size, fine in form, and beautifully coloured; and Odontoglossum Rossi albens, sent by Mr. C. J. Kikkert, Haarlem. The flowers are pure white, with brown bands on the sepals.

BRITISH GARDENERS' ASSOCIATION.

April 12.—A meeting of the Altrincham Branch (Cheshire) was held on the above date. Mr. Calderbank (head gardener to Mr. Crosfield, member of Parliament for the district) presided, and an address was delivered by Mr. R. Hooper Pearson, who represented the London Executive Council. After speaking of the need there exists for such an institution as the B.G.A., and stating that its membership continued to increase—the number at present being nearly 900—Mr. Pearson explained the Council's views in regard to the policy the Association should pursue in the near future. He referred particularly to the objects of the Association as printed in the rules which will be submitted for the approval of the members at the general meeting to be held on May 30, declaring that they were, in the opinion of the executive, of such a nature that no well-wisher of gardeners or gardening need hesitate to support them. They were perfectly free from the taint of coercion, but they expressed the desire all gardeners should have to co-operate in assisting each other to uplift their profession.

Particular emphasis was also laid upon the "Recommendations" issued with the rules, and the speaker asked members to study the spirit expressed in them and be guided by that spirit in their dealings with the matters discussed. Several other speeches were made and questions asked and answered, the meeting showing every confidence in the Executive Council.

BRUSSELS HORTICULTURAL.

April 22.—A meeting of the joint societies was held on the above date in the State Botanic Garden. Twenty-two members of the Jury were present.

M. Vuylsteke exhibited two remarkable Odontoglossums, namely, O. crispum Princesse Elisabeth and O. ardentissimum "l' Espérance," which obtained a diploma.

M. De Laet, Contich, exhibited 30 blooms of Phyllocactus in 30 varieties.

M. F. Lambeau showed some remarkable Cattleyas, Odontoglossums, and Anthuriums, also six splendid plants of Hæmanthus, viz., H. amabilis and H. Eetveldeanus var. Queen Victoria.

M. Stepman showed three hybrid Lilacs, named respectively President Lambeau, Mrs. Fl. Stepman, and M. L. Mathieu, seedlings from a cross between Lilac "Dr. Lindley" × "Mdlle. Marie Legray."

From the Botanic Garden were shown five novelties: Stelis Binoti, Stelis Smaragdina variety longisepala, Cyathea canaliculata var. Congi, Ficus Dryepondtiana, Crinum Congolense, and Begonia Poggei.

M. De Brevre had 12 splendid plants of Primula obconica and a Lælio-Cattleya Lawrenceana var. superba with 60 flowers.

M. Ch. Mees showed 30 plants of Chrysanthemum Madame Mees-Lafont, each in a small pot (4 inches), and a single large bloom. These Easter Chrysanthemums were just as good as those shown in the winter.

M. Hye showed some wonderful Miltonia and Miltoniopsis, and M. Draps-Dom some good Vanda tricolor in varieties.

M. De Meuve had a Cereus serpentina grafted on a high Cereus and full of flowers.

The next meeting will be on May 20. *L.G.*

MANCHESTER & NORTH OF ENGLAND ORCHID.

April 26.—J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), obtained a First Class Certificate for Lælio-Cattleya × Fred Boyle, variety Kerchovæ. This is a delightful plant, being the result of crossing Lælia anceps variety alba with Cattleya Trianæ variety alba; it is an albino of very great merit and fine character.

E. Rogerson, Esq., West Didsbury (gr. Mr. Price), obtained an Award of Merit for Cypripedium × Byrkleyana "Oakdene variety," a good cross between C. villosum × C. bellatulum.

W. Thompson, Esq., Stone (gr. Mr. Stevens), obtained an Award of Merit for Odontoglossum × Bleuanum variety Stevensii, a pretty hybrid between Odontoglossum Roezlii album × O. vexillarium variety Leopoldi.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), exhibited a good Odontoglossum crispum called Westpointense, a richly coloured and well shaped variety. (Award of Merit.)

J. Bothamley, Esq., Longsight, exhibited two nice forms of Dendrobium nobile. (Vote of thanks.)

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), exhibited a tri labellate variety of Odontoglossum crispum.

Messrs. J. Cypher & Sons, J. Cowan & Co., Mr. S. Allen, and J W. Moore, Ltd., were awarded votes of thanks for miscellaneous exhibits. *P. W.*

NATIONAL CHRYSANTHEMUM.

April 30.—The adjourned annual general meeting of this society was held on this date at Carr's Restaurant, Strand, for the purpose of again considering the appointment of a general secretary. About 40 members were present, the chair being occupied by the President, C. E. Shea, Esq., V.M.H. Before the special business of the meeting was taken a vote of sympathy was passed with the widow and relatives of the late Mr. Kenyon, at one time a committeeman of the society. The sub-committee appointed for the purpose of considering the applications for the post of general secretary to the society announced its recommendation in the candidature of Mr. Richard Alfred Witty, a member of the Incorporated Society of Chartered Accountants. No alternative name having been proposed in opposition to that of Mr. Witty's, a vote was taken, with the result that this gentleman was unanimously elected.

It was considered by the meeting that some means should be taken to perpetuate the name of the late valued secretary, Mr. Richard Dean and it was resolved that the committee be empowered to take steps to establish a fund for that purpose. The unanimous wish of the meeting was that the memorial should take the form of a medal, to be given from time to time, not necessarily each year, when some object of special interest at the society's shows be considered worthy of this distinction. Mr. Gerald Dean, who has successfully carried on the office of secretary since his father's decease, and the Misses Dean, were warmly thanked for their services, and it was decided to present Mr. Dean with a silver medal as a souvenir and token of esteem from the society. The annual outing was announced to take place on July 23, Deepdene being the place to be visited.

Obituary.

The Earl of Mansfield.—The death of this nobleman, after a very short illness, is announced. In horticultural and arboricultural circles the late Earl was well known and highly esteemed. In Perthshire his plantation of the Douglas Fir is the most remarkable in the country, and has often been the subject of comment in these pages. Nearer London his woods at Kenwood, near Highgate, are also well known. It is a singular and melancholy circumstance that two of those who took a prominent part in the dinner of the Gardeners' Orphan Fund last year should have been taken from us. Lord Mansfield presided on that occasion and charmed those with whom he came in contact by his genial courtesy. A few months after, it will be remembered, Mr. David Laird died under painfully sudden circumstances.

R. E. Berkeley.—On April 22, Rose Emerica Berkeley, of Crane Hall, Ipswich, youngest daughter of the late Revd. M. J. Berkeley, F.R.S., of Sibbertoft, Northamptonshire.

TRADE NOTICES.

Mr. W. Duncan Tucker, horticultural builder, of Tottenham, has formed his business into a private limited liability company, in order more conveniently to work the business in conjunction with his two sons. The style of the firm will be in future, "Wm. Duncan Tucker and Sons, Limited," the management remaining the same as before.

Frederick Carter and Sons, Limited.—This company has been registered with a capital of £10,000 in £1 shares. Object: to take over (1) the business of seedsmen, nurserymen, florists, &c., heretofore carried on at Horsell and Woking, as Frederick Carter and Sons, and (2) the business of a nurseryman, seedsman, and florist carried on at Woking as Henry Shoesmith. No initial public issue. Registered office, Floral Hall, Commercial Road, Woking, Surrey.

MARKETS.

COVENT GARDEN, May 2.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Anemones (pink) doz. bunches...	1 6- 3 0
— coronaria varieties . .	1 6- 3 0
Azalea indica., per doz. bunches	3 0 5 0
Azalea mollis, doz. bunches ...	6 0 9 0
Calla æthiopica, per dozen	2 0- 4 0
Carnations, per dozen blooms, best American various ...	2 0 4 0
— smaller do. ...	1 0- 2 6
— Malmaisons ...	9 0-12 0
Cattleyas, per doz. blooms ...	10 0-15 0
Dendrobium Wardianum and nobile, per doz. blooms ...	2 0- 3 0
Eucharis grandiflora, per doz. blooms	3 0- 4 0
Gardenias, per doz. blooms... ...	1 6- 2 0
Gladiolus, Blushing Bride, per dozen bunches	9 0-12 0
Gypsophila elegans, per doz. bunches ..	3 0- 4 0
Hyacinth, doz. bun.	2 0 4 0
Iris germanica, per bunch	0 9- 1 0
— Spanish, per doz. bunches...	5 0 8 0
Lilac, per bunch ...	2 0 3 0
Lilium auratum ...	2 6- 3 0
— candidum, per bunch	1 6- 2 0
— lancifolium, rubrum and album	2 0- 3 0
— longiflorum . .	3 0- 4 0
Lily of the Valley, per dozen bunches ...	6 0- 9 0
— extra quality . .	9 0 12 0
Marguerites, white, per dozen bunches .	2 0- 3 0
— yellow, dozen bunches . .	2 0 3 0
Mignonette, dozen bunches ...	2 0- 3 0

	s.d. s.d.
Narcissus, Emperor, per doz. bunches ...	2 0- 3 0
— Bicolor ...	2 0- 3 0
— Incomparabilis varieties ...	2 0- 4 0
— Ornatus .	1 0- 2 0
— Sir Watkin, per doz. bunches...	2 0- 3 0
Odontoglossum crispum, per dozen blooms	2 0- 2 6
— grande, per dozen blooms	4 0- 5 0
Ornithogalum (Star of Bethlehem) per doz. bchs.	1 6- 2 0
Pancratiums, doz.	3 0- 4 0
Pelargoniums, show, doz. bun.	3 0- 5 0
— Zonal, double scarlet	5 0- 6 0
Primula, double white, per doz. bunches .	5 0- 6 0
Ranunculus, doz. bunches .	6 0- 8 0
Roses, 12 blooms, Niphetos ...	2 0- 3 0
— Bridesmaid ...	2 0- 4 0
— Kaiserin A. Victoria ...	2 0- 4 0
— Caroline Testout	3 0- 5 0
— C. Mermet ...	2 0- 4 0
— General Jacqueminot	1 0- 2 0
— Liberty . .	2 0- 6 0
— Mad. Carnot .	2 6- 3 0
— Mad. Chatenay	3 0- 6 0
— Mrs. J. Laing	3 0- 5 0
Stephanotis, per dozen trusses	4 0- 6 0
Stocks (double white) per doz. bunches ...	2 0- 3 0
Sweet Peas, per doz. bunches ..	3 0 5 0
Tuberoses, per dz. blooms ...	0 4- 0 6
Tulips, per dozen bunches ..	4 0 8 0
— special quality	12 0-18 0
Violets, 12 bunches	2 0- 3 0
— special qual....	2 0- 3 0
— Parma, French, large bunches	3 0- 5 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0
— — medium, bunch ...	1 6- 2 0
— — short sprays per bunch...	0 6- 0 9
— Sprengeri ...	0 6 1 0
Adiantum cuneatum, doz. bun.	4 0- 6 0
Berberis, per bunch	2 6- 3 0
Croton leaves, per bunch	1 0 1 6
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	2 0- 3 0

	s.d. s.d.
Fern, French, doz. bunches	3 0 4 0
Galax leaves, per doz. bunches...	1 6- 2 0
Hardy foliage (various), per dozen bunches	2 6- 4 0
Ivy-leaves, bronze	1 6- 2 0
— long trails per bundle... ...	1 0- 2 0
— short green, doz. bunches...	2 0- 3 0
Moss, per gross ...	5 0- 6 0
Myrtle, per dozen bunches ..	3 0- 6 0
Smilax, per dozen trails	3 0- 6 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Acacia armata, per dozen	9 0-18 0
Ampelopsis Veitchii, per dozen	6 0 8 0
Aralia Sieboldi, per dozen ...	4 0- 6 0
— larger	12 0-15 0
Araucaria excelsa, per dozen ...	12 0-30 0
Aspidistras, green, per dozen ..	18 0-30 0
— variegated, per dozen .. .	24 0-36 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	9 0 10 0
— tenuissimus per dozen ...	8 0-10 0
Azaleas, per doz...	18 0-30 0
Boronia megastigma, per doz	18 0-24 0
— heterophylla ...	18 0-30 0
Calceolarias (Herbaceous), p. dz.	5 0- 8 0
Callas, per dozen ..	5 0 8 0
Cinerarias, per dz.	4 0- 6 0

	s.d. s.d.
Clematis, per doz.	8 0- 9 0
— in flower ...	18 0-24 0
Crotons, per dozen	12 0-30 0
Cocos Weddelliana, per dozen	9 0-18 0
Cyclamen, per doz.	6 0-12 0
Cyperus alternifolius, dozen ...	4 0- 5 0
— laxus, per doz	4 0- 5 0
Deutzias, per doz.	6 0- 9 0
Dracænas, per doz.	9 0-24 0
Erica, Cavendishi, per dozen ...	24 0-26 0
— candidissima...	18 0 24 0
— persoluta ...	24 0-30 0
— ventricosa magnifica ...	24 0 42 0
— Wilmoreana ...	12 0 18 0
Euonymus, per doz.	4 0- 9 0
Ferns, in thumbs, per 100	7 0 10 0
— in 48's, per doz.	4 0-10 0
— in 32's, per doz	10 0-18 0
Ficus elastica, p. dz.	9 0 18 0
— repens, per doz.	5 0- 8 0

Plants in Pots, &c.: Average Wholesale Prices *(Contd.)*

	s.d. s.d.		s.d. s.d.
Fuchsias, per doz.	8 0 12 0	Privet, golden, per dozen	5 0-12 0
Genistas, per doz.	5 0- 9 0	Pelargoniums (Zonals), per dozen	5 0- 8 0
Heliotrope, per dz.	6 0- 8 0	— Ivy-leaved, per dozen	5 0- 8 0
Hydrangea Hortensia, per dozen	9 0-24 0	— show	9 0-15 0
— Thos. Hogg ...	12 0 24 0	Rhodanthe, per dz.	4 0- 6 0
Kentia Belmoreana, per dozen	12 0 18 0	Rhododendrons, per doz. ...	18 0-30 0
— Forsteriana, per dozen ...	12 0-21 0	Roses, per dozen...	12 0-18 0
Latania borbonica, per dozen ...	12 0-18 0	Saxifraga pyramidalis, per doz.	13 0-18 0
Lilium longiflorum, per dozen ...	15 0-24 0	Selaginella, dozen	4 0- 6 0
— lancifolium, per dozen ...	18 0-24 0	Spiræa japonica, per dozen ...	5 0-10 0
Lily of the Valley, per dozen ...	18 0-30 0	Stocks (Intermediate), per dozen	5 0- 6 0
Marguerites, white, per dozen ...	6 0-12 0	Verbena, Miss Willmott, per doz..	8 0-10 0
Mignonette, per dozen	4 0- 6 0		

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples:—South Australian:		Grapes (English), Black Hambro, per lb.	2 0- 4 0
— Adams' Pearmain, per case	9 6-14 0	— Muscat, per lb.	2 0- 6 0
— Jonathans, per case	13 0-17 6	— (Cape), small cases	4 0- 8 0
— Monro's Favourite, per case	12 0-15 0	— large cases ...	15 0-20 0
— New York Pippins, p. case	12 0-15 0	Lemons:	
— Rymers, per case	10 0-12 6	— Messina, case	9 0-15 0
— Wellingtons, p. case	12 6-15 0	— Naples, p. case	40 0 —
Nova Scotians, per barrel:		Lychees, per box...	0 10- 1 0
— Nonpareils ...	22 0-25 0	Melons, each ...	1 3- 3 0
— Ribston Pippin	19 0 —	Nectarines, English	12 0-24 0
— Blenheim Pippin	18 6-21 0	Nuts, Cobnuts, per doz. lb... ...	8 0 —
— King of Tompkin's County ...	25 0 —	— Brazils, new, per cwt. ...	42 0-48 0
Canadian, per barrel:		— Spanish, per bag	42 0-43 0
— New York Imperials	25 0-28 0	— Barcelona, per bag	21 6 —
Tasmanian: Ribston Pippin, per case...	16 0 —	— Monkey Nuts, per bag ...	18 0 —
Tasmanian case:		— Walnuts, dried, cwt.	35 0 —
— French Crabs..	11 6-13 0	—Chestnuts, Italian per bag ...	13 6-15 0
— Alfrestons ...	11 6-13 0	— Cocoanuts, 100	10 6-13 6
— Sc. Pearmains	11 6-14 6	Oranges, Valentia, per case ...	15 0-36 0
— Prince Alfreds	12 0-13 0	— Murcia ...	18 0-22 0
— N.Y. Pippins...	11 6-15 0	— Navel	11 6-14 6
Bananas, bunch ...		— Jaffa	13 6-15 0
— No. 1 quality...	7 0- 8 6	— Jamaica ...	10 6-11 0
— No. 2 quality...	5 6- 6 6	— Blood	9 6-11 6
— Extra quality...	8 6-10 0	Peaches (English), per dozen ...	8 0-21 0
— Giants, per bunch	11 0-13 0	Pears (Cape), p. box	3 0- 4 0
— Jamaica ...	4 6- 6 0	— Californian, box	8 6- 9 6
— Loose, per dz.	0 8- 1 3	— stewing varieties, per ½ bush.	2 6- 3 0
Cranberries, case...	13 0-14 0	— stewing, crate	10 6 —
Dates, Tunis, per box	4 0 —	Pineapples, each...	3 0- 4 6
Figs, per dozen ...	2 0- 6 0	Plums (Cape), per box	10 0 —
		Strawberries, p. lb.	2 0- 3 0
		— Second quality	1 0- 1 6

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, Green French, p. doz.	2 0 —	Marrows, per doz.	2 0- 5 0
— Ground, ½ bush.	1 3- 1 6	Mint, per dozen ...	4 0- 6 0
Asparagus, per bundle:—		Mushrooms (house) per lb.	1 0 —
— Toulouse ...	2 0 —	— Buttons, per lb.	1 2 —
— Montauban ...	3 3- 3 6	Mustard and Cress, per dozen pun.	1 0- 1 6
— Barcelona ...	0 7- 0 8	Onions (English), bag	3 6- 5 0
— Dijon	0 8-0 10	— Valencia, case.	10 0 —
— Giants	4 0- 9 6	— pickling, per bushel	3 6- 4 0
— Spanish ...	0 7- 1 3	— French, ½ bag..	2 3 —
— Sprue	0 5 —	— Spring, dozen bunches ...	1 6- 2 0
Beans, French, p. lb.	0 6 —	Parsley, 12 bunches	1 0- 1 6
— Broad, per pkt.	0 6 —	Parsnips, per bag...	2 0- 2 3
— Broad, per pad (loose)	2 6- 3 0	Peas (French flats)	5 0 —
— Flageolet, box	1 0 —	— English, per lb.	0 10- 1 0
— Home grown, per lb	0 10- 1 0	— Channel Isl'nds	0 6- 1 0
Channel Island	0 10 —	Potatos (new):—	
Beetroot, bushel ...	0 9- 1 3	Canary, cwt....	11 0-14 0
Broccoli, sprouting, per bushel	1 6- 1 9	— Channel Island Kidneys ...	0 4-0 4½
— per doz. ...	1 0- 2 0	— Algerian, cwt.	22 0 —
Cabbages, Spring, per dozen ...	1 0- 1 6	— ,, barrel	22 0 —
— red, per bushel	2 0 —	Rhubarb, per doz. bundles ...	2 6 —
Carrots, French pad	3 0 —	Spring greens, per bushel	2 0- 2 6
— per bag, unwashed ...	1 3- 1 6	Salsafy, per dozen bundles ...	4 0 —
— bag, washed ...	2 0- 2 6	Sea Kale, p. punnet	1 0 —
— new, per dozen bunches ..	3 0- 7 0	Tomatos:—	
Cauliflowers, per tally	8 0-10 0	— Foreign, bundle of 4 boxes ...	12 0-20 0
Chicory, per lb. ..	0 3 —	— English, per lb.	0 9-0 10
Chow Chow, p. dz.	1 6- 2 0	Turnips, per doz. bunches ...	1 0- 1 6
Cucumbers, dozen	2 6- 3 0	— bags	1 0 —
Endive, per dozen	0 10- 1 3	— new, per dozen bunches ...	8 0- 9 0
Horseradish, foreign, per dozen bundles ...	10 0-14 0	Turnip Tops, bush.	1 0- 1 6
Leeks, 12 bundles	1 6- 3 0	Watercress, per doz. bunches ..	0 4 —
Lettuces, Cos, p. dz.	4 0- 6 6		
French, per dz.	1 0- 1 9		

POTATOS.

Blacklands, 70s. to 75s.; Lincolns, 70s. to 80s.; Scotch Greysoils, 60s. to 65s; Dunbars, 90s. to 95s. per ton. Canary New Potatos, 12s. to 14s. per cwt.—*John Bath, 32 and 34, Wellington Street, Covent Garden.*

REMARKS.—Supplies of Oranges are extremely short, and the fruit arriving is very wasteful. Good samples realise high prices. Lemons are dearer; the first consignment from Naples for the season arrived during the present week, and sold at 40s. per case. A shipment of 29,000 boxes of Tasmanian and Australian Apples is to be offered for sale during this week, also a few good samples of Australian Pears. Strawberries are still plentiful, but owing to the very cold weather there is little demand, and prices have fallen as low as 2s. 6d. per lb. Well-coloured Bananas are a scarcity, owing to the very cold weather. Asparagus is dearer; supplies of Paris Green have finished. A very large consignment of Teneriffe Potatos arrived this week. Foreign Tomatos are very dear, some good samples making as much as 18s. to 20s. per bundle of cases. Trade generally is very quiet.—*E. H. Rides, Covent Garden, Wednesday, May 2.*

COVENT GARDEN FLOWER MARKET.

Trade has improved a little, especially in plants for window-boxes, etc. Ordinary bedding plants are also commencing to sell freely, and, with a few days' mild weather, trade in these plants would be in full swing. Most growers like to market their bedding plants early, in order to make room for successional crops, but the continued frosty nights have operated against their sale this season, and even hardy flower roots have not sold so well as usual. Ivy-leaved Pelargoniums, in beautifully-flowered plants suitable for decorations, are seen, also smaller plants adapted for window-box work. The varieties Madame Crousse, Galilee and Souvenir de Chas. Turner still take the lead, but Baden-Powell is also seen. Zonals in all the ordinary market sorts and show varieties are also good. Ericas are to be had in well-flowered plants; E. ventricosa magnifica and perspicua erecta are remarkably good. E. Cavendishi is more plentiful. Hydrangea Hortensia in 48 size pots, with very large single heads of bloom, were making 18s. per dozen. Marguerites are seen in all sizes, from plants in 48 size pots, and sold at 6s. per doz.; finely-flowered plants of the same size were making 15s. per dozen, plants in 8in. pots realising 7s. 6d. each. Mignonette, chiefly autumn-sown plants, is plentiful. Some of the spring-raised plants are also seen, and these sell more readily. Intermediate Stocks are still of very good quality. Verbena Miss Willmott can be had from several growers. Rhodanthe is plentiful and cheap, with a poor demand. Nice plants of Fuchsias can be had, also of Heliotrope. Supplies of Genistas are now almost finished for the season. Cinerarias continue plentiful. Lilium longiflorum in pots are good, but with their exception few Liliums are to be had. Rambler Roses vary very much, both in regard to size and quality. Some tall, well-flowered plants of Dorothy Perkins were making up to 10s. 6d. each. Best quality plants of Crimson Ramblers were also realising good prices. Ferns, with fresh growth, are now very good, and a better trade in them seems to exist. Palms are well supplied. Many large standard, trained, and pyramidal specimens of Sweet Bays are seen, but there is little demand for them. Fine plants of Pandanus Veitchi, with the terminal leaves quite white, were noticed this morning. These find a ready sale for decorations, but they are of no further use for growing as specimen plants.

CUT FLOWERS.

There is very little variation either in the amount of supplies or in business done. Good Roses are still over-plentiful, while flowers of ordinary quality realise very low prices. Carnations are also over-plentiful, some good Souvenir de la Malmaisons are seen. Spanish Irises in several shades of colour, including soft blue-mauve tints, are appreciated most. Lilium longiflorum has been over-plentiful, and I am informed that during the end of last week they were disposed of for very low figures. Other varieties of Lilies can also be had in plenty. Callas are abundant and cheap. Supplies of Violets are somewhat short. In Orchids I noticed a fine lot of Odontoglossum crispum. Dendrobiums are plentiful, and good spikes of Cymbidium Lowianum are also seen. Narcissus of the Poeticus type are abundant, also others of the Incomparabilis section, but the season of the Ajax varieties is nearly over. Tulips from the open ground have been injured by frost at nights. Gladiolus Blushing Bride is very pretty. Sweet Peas are of good quality. It is difficult to give approximate prices just now, for demands vary very much, and, further, the supplies may vary greatly in the course of a few days, for growers are now beginning to clear their houses for the Tomato crops, etc.—*A. H., Covent Garden, Wednesday, May 2.*

ANSWERS TO CORRESPONDENTS.

APPLES: *G. Brazier.* London Pippin.—*B. St. John Ackers.* The two Apples of the culinary variety are Dumelow's Seedling Wellington, one of the very best cooking Apples we have. The fruits may be used from November until May. The dessert fruit is of the variety Mannington's Pearmain, one of the best late dessert Apples in use from December onwards, but best in January and February, remaining good until March.

BOOKS: *C. B. U.* *Rubber Cultivation in West Africa (1901)*, by J. H. Holland, Royal Gardens, Kew. *The Cultivation and Preparation of Para Rubber (1904)*, by W. H. Johnson. Published by Crosby, Lockwood and Son, London, and obtainable on application to our publisher.

CUCUMBERS SHRIVELLING: *J. C. McP.* Look to the roots, and tell us the conditions under which the plants have been growing, and then perhaps we may be able to help you.

GRAPES: *W. P.* Your grapes are attacked with the spot disease. See our last issue, p. 272.

IRISES: *B. L.* Iris Sindjarensis, which belongs to the Juno section of Irises, should reach the flowering stage in the third or fourth year from the seedlings appearing. As your seedlings have not flowered as yet, we advise lifting them and giving them a complete rest out of the ground for at least two months, not subjecting the young plants to such exposure as to cause shrivelling of the roots, but placing them in dry sand in a well ventilated position. Lift the plants in July and replant them in September or early in October. Iris coreana, we do not know. It is possible that the name is a corruption of I. caurina, which is also known as I. versicolor var. virginica. If so, treatment like that given to I. graminea should be suitable. Should the plants remain more or less evergreen as in I. graminea, there should be little difficulty in flowering them.

ITALIAN PAPERS: *A. L.* In addition to the one mentioned in last week's issue, we are reminded by a correspondent of *La Villa ed il Giardino, Revista Mensile di Orticoltura*, published at Piazza Rusticucci 34, Rome. This periodical has been out about two years, and is edited by N. Severi. The subscription is five francs per annum.

NAMES OF PLANTS: *A. C. H.* Vanda teres, an ordinary variety. The jagged edge of one of the side-lobes of the lip is abnormal. Cypripedium siamense, a very poor Cypripedium found in gardens under several names.—*J. J. F.* Berberis empetrifolia.—*W. K.* The Norway Maple, Acer pseudo platanus.—*F. G. B.* The Douglas fir—Pseudotsuga Douglasi; Epimedium alpinum.—*C. A. N.* Cratægus coccinea.—*J. D. Rickmansworth.* Staphylea pinnata.—*H. R. G.* 1, Sedum sexangulare; 2, Sedum hispanicum; 3, Sedum album; 4, Fuchsia "Sunray"; 5, Sedum carneum variegatum; 6, probably a Cotyledon.—*J. M.* 1, Nephrolepis pectinata; 2, Echinocactus sp.; 3, Dendrobium next week; 4, Cupressus nootkatensis; 5, Cupressus Lawsoniana; 6, Juniperus sinensis.—*T. R. & Son.* Ruscus androgynus, a greenhouse climber from the Cape.—*A. N. R.* Caladiums should be sent to a grower for naming, as they need careful comparison. 2, is probably Silver Queen; 3, Pellionia Daveauana.—*E. L.* 1, Pyrus malus floribunda; 2, Ornithogalum nutans; 3, Dendrobium next week; 4, Cotyledon (?); 5, Adiantum polyphyllum.

NOTICE TO LEAVE: *H. Y. N.* In the absence of an agreement the employer might demand a month's notice, but if the case were taken to Court the magistrate might be guided by the circumstances of the particular case of which we know but little.

PEACHES SPOTTED: *J. H. A.* The fruits are covered with patches of the common Peach mildew—Oidium leucoconium. Burn the diseased fruits, and spray the trees and remaining fruits with liver of sulphur, using 2 ozs. to a gallon of water.

PEACH PRINCE OF WALES: *A. N. R.* The anæmic-looking condition of the foliage is due to the disease described as "Silver Leaf." Not much is known of the cause of silver leaf, although by some authorities it is attributed to a ferment secreted by fungus at the roots of the tree. Cut out the affected branches, water with a weak solution of iron sulphate, and in the autumn examine the roots and place fresh soil about them.

PTERIS WIMSETTI: *Hortus.* Numerous forms of this plant are seen, and yours is certainly one of the most pleasing. The leaves sent greatly resemble those of P. Childsi.

TESTIMONIAL: *Cheshire.* Not knowing the circumstances we cannot offer a definite opinion as to whether the testimonial is an honest expression of your employer's opinion or not.

TULIP: *Chrysalora.* The bulbs are attacked with the Tulip mould, Botrytis parasitica. Burn the affected bulbs and do not plant in the same ground next year.

WHITMILL'S GARDENERS' UNIVERSAL CALENDAR, 1747: *H. G.* We do not think this is very valuable. Its exact financial value would be determined on sending it to the sale rooms.

COMMUNICATIONS RECEIVED.—S. W. F.—F. B.—E. M.—J. F. R.—A. P. H.—E. L.—J. M.—F. E. B.—F. H., Redlands U. S. A. H. B.—T. H. C.—A. W. -C. L.—A. A. W.—J. T.—S. C. -Interested, Cape Colony—H. R. W.—H. K.—W. B. B.—D. R. W.—T. B.—J. B. C.—A. B. G.—H. B.—L. E. W.—H. J. W.—B.

For Market Reports see page xii.

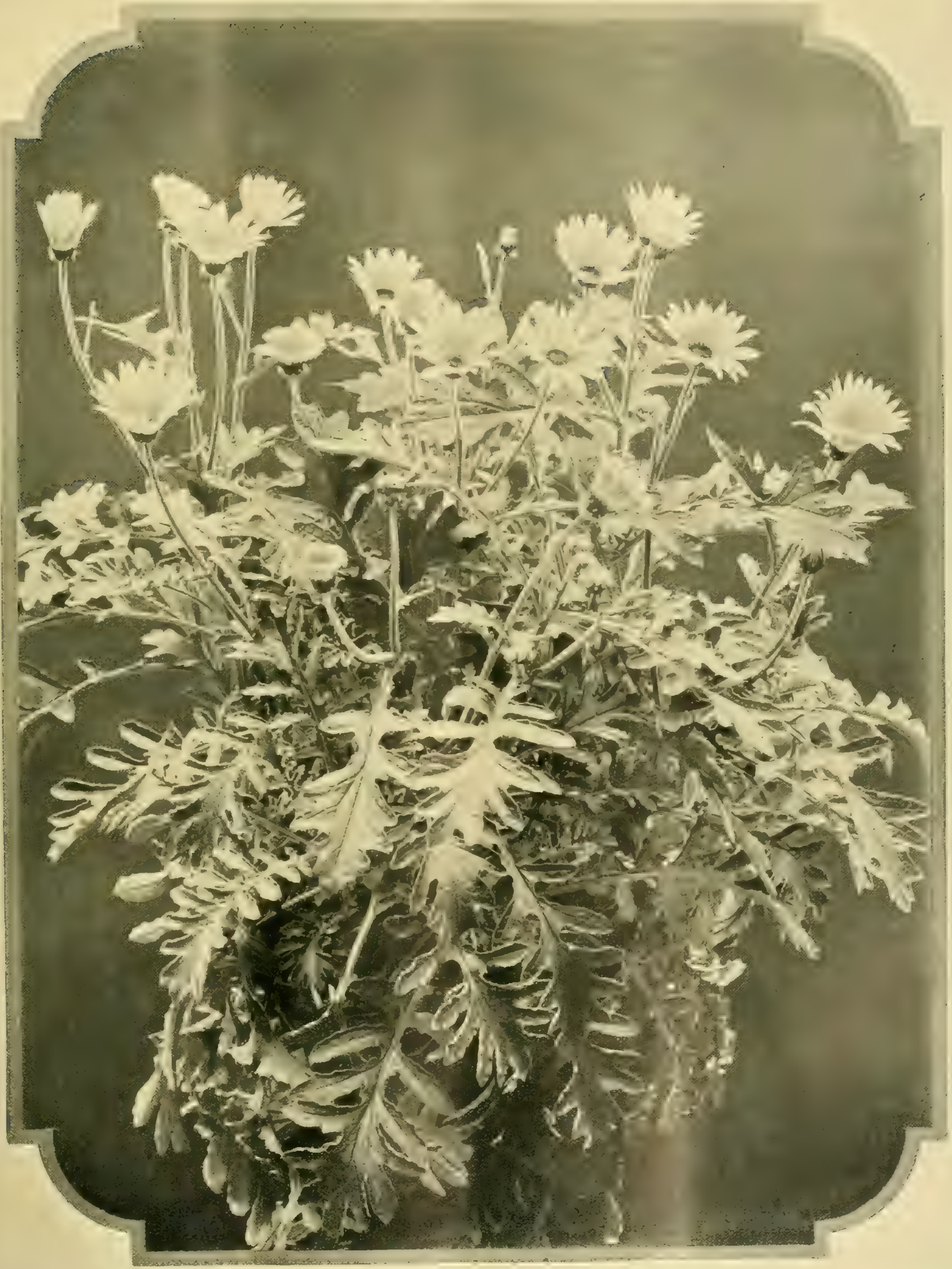


Photo by E. J. Wallis.

ARCTOTIS ASPERA. FLOWERS CREAMY WHITE, FOLIAGE GREYISH GREEN.
FROM THE ROYAL GARDENS, KEW.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,011.—SATURDAY, May 12, 1906.

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THE ROYAL ACADEMY.

THERE are fewer floral and garden subjects in this year's exhibition than we have ever noted before. There are hardly any flower-studies in oils, and the few that are shown are small in size and without interest. It is far better to exhibit no flower, fruit, or garden subjects than to deface the walls with crude suggestions or "impressions" of nothing. "Impressions" are sometimes very well from masters of art, but we are nowadays far too often favoured with "impressions" from ladies and gentlemen who have no foundation knowledge and so have nothing to impress. The almost total absence of flower subjects from the Royal Academy this year is not because all the subjects have been painted, and there is nothing more to paint, for during the last two years many magnificent new plants have been flowered for the first time. The truth is, flower-painting is not easy; many flowers will not wait; they change, fade, and droop before one's eyes; they are not suitable for slap-dash work; they cannot be remembered and must be drawn as well as painted from the life. It often happens, even in simple subjects, that the drawing alone is most difficult, and painting, as regards colour, almost impossible.

Sometimes landscape and architectural artists treat us to night subjects, as 21, *The Temple of Tivoli*, by moonlight (Harold Speed), but where is the moon? and 393, *The Ruins of the Amphitheatre, Pompeii* (O. Wynne Apperley). This, too, is a night subject. Both these pictures would have required great skill in drawing and painting had they been pictures of daylight on classical ruins, but how easy it is to judge of architecture as seen at midnight. Who would be satisfied with Amiens in a dense fog, or with Veitch's or Sanders' Orchids as seen at midnight, without a candle? In 432, *The Acropolis*, from the Pnyx, Athens (John Fulleylove), we have an excellent picture of the Parthenon and adjoining buildings, as seen in daylight. Mr. Fulleylove is an accomplished architectural artist, who can both draw and paint. No one wishes to trouble about temples and amphitheatres in the middle of the night, or to see alleged representations of such objects where the drawing is obviously incorrect.

Whilst flower subjects seem to have almost vanished, there is an extra number of studies of—well, let us say, Naiads, Oreads, and Dryads; these ladies look very well if carefully drawn and painted, but one may easily have too many of them, as they are annually represented in the Paris Salon.

In 44, *Calm before a Storm* (Alfred Parsons, A.) we have an admirable and most carefully painted landscape, every part—sky, water, trees, and even water plants, as the flowering Rush and white Water Lilies—studied from nature. One cannot pass 90, *Linnean Society of London, Admission of Lady Fellows* (James Sant, R.A.). This represents the meeting room of the society, with the president formally admitting Mrs. Frank Crisp as a Fellow; numerous other easily recognised portraits are given in this picture. 95, *J. Williams Benn, Esq., M.P.* (George Clausen, A.): this portrait is remarkable as coming from the brush of a most famous landscape painter, another of whose works—109, *The Green Fields*—hangs near by. 205, *The Sleeping Beauty* (Archibald Wakeley): the beauty is surrounded with curved briars. The beauty may have been painted from life, but we have never seen living briars similar to those in the picture. Everyone knows the work of John S. Sargent, R.A. In 207, *Maud the Daughter of George Coats, Esq.*, visitors may note how Mr. Sargent polishes off Roses; there are two white Roses on the lady's neck, and a third elsewhere. There are flowers in 395, *The Market Place* (Edith J. Sealy), but one cannot properly see the picture, which is close to the floor, without doubling one's self up like an acrobat, and this feat we were unable to accomplish. 402, *July* (Ernest R. Fox), is a garden view, with Poppies, Lilies, and one scraggy Rose bush. 441, *Autumn Garden, Bavaria* (Orrin Peck): an unusually large picture, with large, life-size cabbages in the foreground; it is easier to paint cabbages than Lilies, the former can be "suggested" more readily. 485, *Fleur-de-Lis*: a lady in white (G. A. Storey, A.). The lady is accompanied by Lilies and Begonias of forms unknown to the writer. Similar unusual varieties of plants occur in the same artist's 493, *Leda*. 527, *Summer Roses* (Alfred Morgan): this picture is cornered in such a peculiar way, and was so glossy when we were in Gallery VIII. that we could not see the summer Roses. 564, *Summer Flowers*: we are not inclined to offer criticism on this effort. 566, *Stocks* (John Gray): we have never seen stocks like these, either in form or colour. 573, *Where Painted Leaves are Strewn* (John Sowerby), is an old-fashioned garden with tall Chrysanthemums. 658, *Shirley Poppies* (Miss Arnesby Brown): faint suggestions of the poorest forms and colours. 710, *The Ever Open Door* (Sigismund Goetze): a large picture, with a foreground of cut flowers, all of the crudest "Berlin wool" character. 741, *The Blessing of the Plants, Santa Barbara, California* (Orrin Peck): this represents monks sprinkling pot-flowers of unknown species with holy water. The ecclesiastic who holds the holy water is kneeling. 756, *Her First Communion* (Mary F. Raphael): this represents a girl clad in white, with her face veiled; the veil, like darkness or fog, comes in conveniently. The maid is surrounded with what are possibly meant for white Lilies; we are uncertain. We have passed over many excellent landscapes by Sir Ernest A. Waterlow, R.A., B. E. Leader, and others; we have passed the historical pictures of various degrees of merit and demerit, and an army of portraits, these portraits often of wholly unknown people, all striking attitudes, some frowning, others smiling, some familiar, others haughty, two with cigars. They fairly frighten us; most of the portraits are advertisements of the painter's ability, and priced at so much a square foot.

Now there are the water-colours, where the dreaded "First Violet," "Early Blossoms," "Bird's Nest, Snail Shell and Ivy-leaf," threaten us. We slowly enter, with trembling footsteps and suppressed anger, indicative of sudden apoplexy. 859, *My Neighbour's Garden* (Frederick W. Jackson): a suggestion of the neighbour's white Lilies. 873, *Hollyhocks by a Grass Walk* (Alfred A. Parsons, A.); 890, *The Priory*: autumn flowers, by the same artist. These two pictures immediately arrest attention for their truth and beauty. Here we have trees, Hollyhocks, Clematis, Cinerarias, Ampelopsis, and other plants most truthfully drawn and coloured. Immense care has been taken in the production of these two small works. In our opinion, a journey might be profitably made to Burlington House solely to see them. 1013, *Anemones* (Helen Thornycroft) is very well executed. 1023, *Violets*, by the same artist, less well. In the centre of the screen and "on the line," is 1008, *Zinnias* (H.R.H. Princess Patricia of Connaught): the drawing represents a group of Zinnias of different colours in a tumbler of water. Zinnias are not very graceful plants, they are somewhat stiff and formal, difficult to draw and difficult to colour; the petals are geometrically arranged like scales on a cone, so that a new study is required for every position of a bloom. The colours are well known and opaque, and so in every way the subject is a difficult one. The drawing is well worth notice as an attempt to overcome difficulties. *Your Artist.*

ARACHNANTHE ANNAMENSIS.

ALL who saw this remarkable flower at the last meeting of the Royal Horticultural Society were impressed with the singular form and structure shown in its parts. The posterior sepal was raised almost perpendicularly aloft, and it finished a short distance from the end with a lobe that gracefully terminated in a point. The other two sepals hung down, and, curving until they over-lapped, formed an alighting board in place of the lip which is very much reduced. This latter organ is whitish, marked with purple, and is altogether insignificant. The blotchings seen on the sepals and petals are reddish-brown in colour, the interruptions being of a yellow shade. The plant was introduced from Annam by Messrs. Sander and Son, and was flowered last year by F. W. Moore, Esq., at Glasnevin, who showed the specimen from which our figure was taken on May 1, at the Royal Horticultural Society, Westminster.

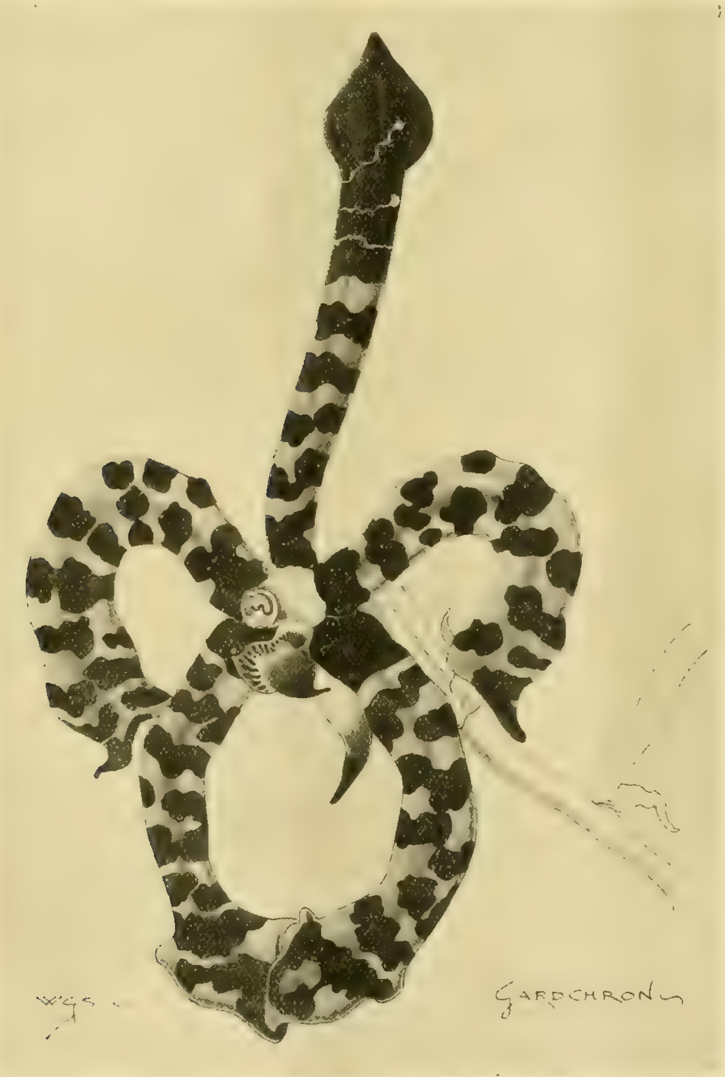

FIG. 118. ARACHNANTHE ANNAMENSIS, COLOUR OF FLOWER YELLOW WITH PURPLE SPOTS.

BATTERSEA PARK.

APART from the budding beauty of tree and shrub in this interesting park is the fine display made by the beds of Narcissus, Tulips, Wallflowers, Doronicum, Primulas, Polyanthus, and Megaseas, some, mixed together, in pleasing combinations in the sub-tropical garden, the panel parterre near the western entrance, the refreshment kiosk on the front, and in other parts. The earlier varieties of Hyacinths, Van Thol Tulips, and Daffodils are now past, but much remains in full beauty, and in the event of fine weather ensuing will afford a good display for a few weeks longer. There is considerable space occupied by promiscuous mixtures of Dutch bulbs, Crocuses, species of Narcissus that flower early in the spring, which, however, made but an evanescent show owing to the cold, wet weather prevailing, nothing remaining of this but the foliage at the present date.

Of varieties of florists' Tulips there were observed fine masses of Jost Von Vondel, scarlet and white; Cottage Maid, showing well in mixture with Belvoir Castle yellow-flowered Wallflowers; T. Wouvermans, and the same variety of Wallflower; T. Proserpine, a very fine bed; and another of T. Keiser's Kroon, one of the finest, large, red-flowered varieties either for bedding or for pot culture; T. White Swan; T. La Belle Alliance, a fine old scarlet-flowered variety was effective, mixed with Hyacinth "gigantea." One of the best beds consisted of H. King of the Blues, associated with Tulips Thomas Moore and Couleur Cardinal, and likewise with T. Yellow Prince in another bed, forming a telling contrast. Several beds of Narcissus Barri conspicuus were excellent. A very large oblong bed, filled with brown Wallflowers, yellow and scarlet Tulips, and varieties of Narcissus, finds many admirers. A mass of Doronicum austriacum, with bright yellow flowers, and one of the earliest of the genus to come into bloom, was associated with La Belle Alliance Tulip in quantity, and made an effective group. The foregoing beds are to be found in the sub-tropical garden, and they comprise the best display in the park at the present date. In other parts the beds are few, the cost being limited in amount. Still, enough is done to save the park from the charges of baldness and lack of colour at this season. Of other plants note should be made of the numerous varieties of Crabs, double and single-flowered Cherries and Almonds, which enliven the shrubberies during March, April, and the early weeks of May. Striking blotches of colour are at present afforded by Acer rubrum, whose young leaves of red, yellow, and light green tints are very conspicuous here and there. Unfortunately the colouring becomes dull with the advance of the season, and finally green. *F. M.*

NEW OR NOTEWORTHY PLANTS.

PRIMULA ORBICULARIS.*

YET another new species of Primula from China! And we know that there are still many more undescribed, to say nothing of the undiscovered ones; for as vast areas of Western China are unexplored, we may reasonably expect that collectors have not nearly exhausted the flora. P. orbicularis has foliage very similar to that of P. Cockburniana and P. tangutica, species of recent introduction, but the flowers are very different. Its nearest allies, however, are P. sikkimensis and P. Stuartii, from which it differs in having nearly entire leaves; in the tube of the corolla, which scarcely exceeds the calyx and is constricted near the top and below the middle at the insertion of the very short stamens, and in the limb of the corolla, which is quite flat with quite entire lobes. Indeed the structure of the flowers is more like that of some species of Androsace. The description below was drawn up from a plant which probably did not represent the full development of the species. It was sent to Kew to be named by Messrs. James Veitch & Sons, who raised it from seeds brought home from Western China by Mr. E. H. Wilson. The latter did not meet with it in flower, but collected seed on the chance of it being worth cultivating. He also dried specimens of what he believes to be this species, but they present some differences, possibly due to the conditions under which they grew. In the first place they are more robust, the largest having a scape 15 inches high and bearing two tiers of eight and nine seed vessels respectively, and leaves as much as 8 inches long, the petioles being narrow and nearly as long as the blade. The greater elongation may have been brought about by their growing in humus. Time will show whether they are really the same as our P. orbicularis, which has yellow, fragrant flowers about 1 inch in diameter, and almost like those of an Auricula in texture and substance. It is certainly a very pretty and distinct species. The name has reference to the general outline of the flower and the separate lobes of the corolla.

[We learn from Messrs. Veitch that P. orbicularis has been inadvertently distributed by them under the name P. tangutica, but P. orbicularis is a finer thing. Those concerned should communicate with the firm.—ED.]

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* *Primula orbicularis*, Hemsley, species nova ex affinitate *P. sikkimensis* et *P. Stuartii*, a quibus foliis fere integris, corollæ tubo calycem vix excedente et limbo rotato lobis integerrimis differt.

Folia subcoriacea, oblongo-lanceolata, 2-6 poll. longa, inferiora minora, obtusa, longitudinaliter recurva, minute dentata, in petiolum late alatum subvaginantem augustata, primum minute farinosa. *Scapus* circiter pedalis, teres, ac flores flavo-velalbo-farinaceus. *Involucri bracteæ* 5-7, parvæ, pedicellis multoties breviores, basi incrassatæ, connatæ. *Pedicelli*, saltem per anthesin, 3-4 lin. longi. *Umbellæ* 5-7 floræ, floribus luteis fragrantibus. Calyx crassus, campanulatus, vix $\frac{1}{3}$ poll. longus, intus extusque farinosus; lobi ovati, obtusi, erecti, tubum æquantes. *Corollæ* hypocraterimorphæ tubus calycem vix excedens, prope apicem et infra medium ad staminum insertionem constrictus, fauce angusto crenulato; limbus orbicularis, rotatus, circiter 1-poll. diametro, planus, lobis fere orbicularibus leviter obtegentibus integerrimis margine ciliolatis. *Stamina* ad tubi constrictionem infra medium inserta; filamenta $\frac{1}{6}$ lin. longa; antheræ circiter lineam longæ. *Stylus* inclusus, stamina superans.—Chinæ occidentalis incola. *W. Botting Hemsley.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CERVANTESII PUNCTATISSIMUM.

A flower of this rare and pretty variety of Odontoglossum Cervantesii, which was originally described in the *Gardeners' Chronicle* (1878, II., p. 527) by the late Professor Reichenbach, is sent by Captain J. B. H. Goodden, Compton House, Sherborne, Dorset, who states that it is from a freshly imported plant. The species varies considerably, the variety decorum having a deeply and irregularly lobed lip, and the variety roseum, which has the usually white outer halves of the segments rose-tinted. The variety punctatissimum combines the characters of both the others named, but has in addition a profusion of small deep rose-coloured spots on all the segments, the front of the lip and the wings of the column being very prettily decorated with them and having also a distinct red spot at the inner angles of the irregular lobes of the margin of the lip. A very finely coloured flower of O. Rossi rubescens is also sent. Both these pretty dwarf Mexican species are cool-house plants, and, with care, may be grown in an ordinary conservatory. They thrive best in Orchid pans suspended near the glass of the roof, but if grown in pots they should be placed on a shelf near to the glass. When arranged on the staging with stronger-growing species they usually degenerate.

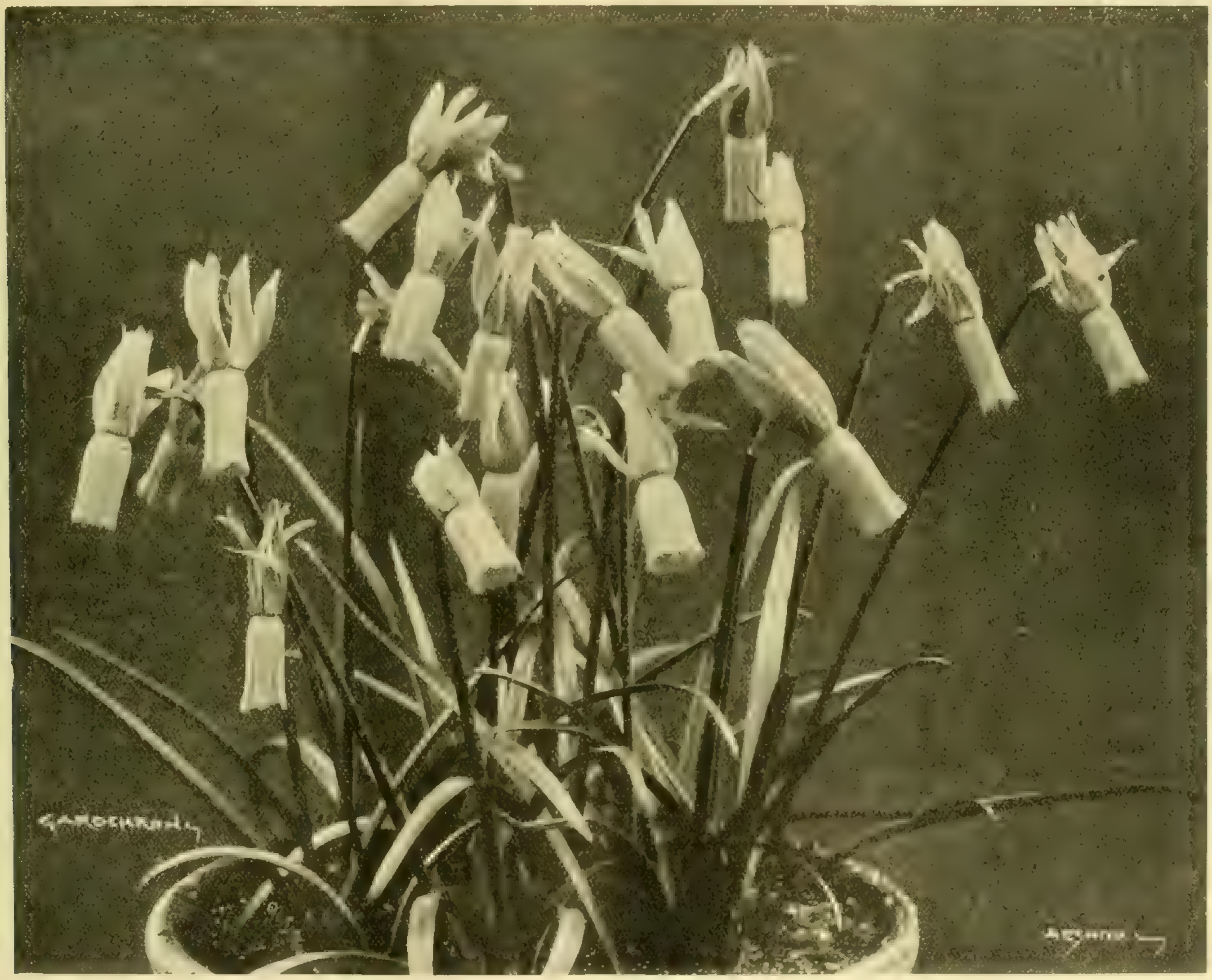

Fig. 119.—A fine pot of Narcissus cyclamineus grown in the alpine house at Kew.

(From a recent photograph by Mr. E. J. Wallis.)

A NEW DENDROBE.

In the *Queensland Agricultural Journal* for March, 1906, Mr. F. Manson Bailey, the colonial botanist, describes a new white flowered Dendrobium, of the Aporum section. It is a native of British New Guinea, and is said to be well worthy of cultivation. The name given to it by Mr. Bailey is D. litoreum.

DENDROBIUM THYRSIFLORUM GALLICEANUM.

In *Lindenia*, VI. t. 241, a pretty, though evidently abnormal, Dendrobium is figured as D. Galliceanum. The variation from ordinary D. thyrsiflorum consists in the flat arrangement of the labellum, which is yellow in the centre and broadly margined with white. Some of these pretty abnormal forms are constant, and it would be interesting to know whether that plant, which was also shown at the Royal Horticultural Society, proved so or not. A similar variety is sent by Mr. R. Robinson, Arabella Street, Roath Park, Cardiff, who has been asked to report on the plant when next it flowers. The sepals and petals are white and as in ordinary D. thyrsiflorum, but the labellum is broadly ovate, acuminate and slightly concave, white with a broad orange band down the middle. Very different from the ordinary form. The difference seems to be by a reversal of the usual peloric condition in which the petals or sepals resemble the labellum. In this case the sides of the labellum appear to be petaloid, both in texture and colour.

ODONTOGLOSSUM TRIUMPHANS.

A flower of a very distinct form of this species is sent by Messrs. John Cowan & Co., Gateacre Nurseries, near Liverpool, who state that their importation has given several instances of similar forms. The sepals and petals are not barred, but are almost of a bright chestnut red colour, the tips only being yellow. The lip also is of the same colour as the petals with the exception of a narrow white margin, and a small whitish area around the crest. It is a very distinct and effective variety, the reddish glow at the base of the petals giving the flowers a bright appearance. *J. O'B.*

WATER GARDENS.

The transformation of lakes, pools, and water-courses into veritable water-gardens, their disposition in the garden-landscape, and the plants to be used in connection with them, call for more intelligent study and artistic conception than the subjects generally receive. Hundreds of sites in various parts of Great Britain lend themselves effectively to the artistic formation of water gardens of the best possible type; the lake and riverside, the smaller streams, the castle and farm-moat, the curling pond, the duck pond, or even the ditch fed by land drains and small springs may all be suggested in this connection. A few such sites have become models of what a water garden should be—noteworthy exceptions of careful planning and planting. Some, however, have become simply flower gardens of no particular merit, the water being an incident in a great floral display rather than the dominant feature; but the great majority of such sites are left to nature's own planting—in some instances it is done more effectively and artistically than man can do it; in others the results are of a negative description. I have seen tiny rock-pools constructed at considerable expense, when, but a few hundred yards away, all the materials for the formation of a water garden that all could admire and thousands might envy, had been wholly overlooked.

The best type of a water garden is that which is designed away from the formal parts of the garden proper, one amid scenes of sylvan beauty for preference, and, whether large or small, there should be nothing attempted that will give the impression of a strained effort to secure brilliant colour effects. The gardener will need to forget for the moment more than half his experience and training, and betake himself to the nearest riverside to study how native plants grow in such places, and strive to introduce into his water scene that restful charm which the careful disposition of stately waterside plants and lovely aquatics alone can give.

Three other styles of water gardens, mainly artificial, are possible, viz., the rock-pool, the ornamental basin, or fountain of worked stone, and the modest series of sunken tubs, that admit of the cultivation of aquatic and water-loving plants in the smallest garden.

ROCK-POOLS.

The rock-pool is the kind of water garden usually adopted. It has the advantage of being easily made and easily managed, being simply a hollow formed at the foot of a rockery and fed by a trickling stream, and occasionally enhanced by a small waterfall, the source of which is hidden among stones. These rock-pools have a real use in that they enable one to grow a variety of plants in and around them that would be difficult to manage under more natural conditions, and they often form part of a very interesting and enjoyable picture; in fact, the rock-pool is the only possible water garden for the small estate. The rock garden benefits by such an addition in no uncertain way. Every rock garden that I have seen built of other than stratified stone that alone suggests a rugged bank represents the world of plants practically upside down, and the more elaborate the rock garden the more apparent does this peculiarity become.

In the first place, the Alpine "ascent" is often reversed in the rock garden—the Alpine flora finding a position near the base, whilst bold-habited plants of the plains are placed at the top, an anomaly that is difficult to overcome so long as rock gardens assume the form of piles of stones and "dug-outs," in the stead of a more natural arrangement in which weatherworn boulders jut out from a turf slope, as one sees them in so many instances, both at home and abroad. The rock-pool helps, in a great measure, to counteract this incongruity, for bold-habited marsh or aquatic plants, and the presence of water in some quantity, lend to the rock garden the only natural features of its scheme, and destroy that sense of artificiality which dominates every rock garden known to me. The rock-pool cannot be considered a water garden in its proper sense; it exists mainly for the benefit of the rock garden.

The ornamental basin or fountain is too obviously a work of art for the gardener to do much with, beyond introducing a few of the lesser Water Lilies, whose presence will tend to lessen its architectural severity.

The series of sunken tubs is at its best only a means that enables one to grow water plants almost anywhere, but there is ample scope for careful planning in tub gardening, and many an uninteresting slope could be transformed into a water garden by the use of tubs, that for interest and effect, particularly when associated with rocks, would compare favourably with many natural water gardens of larger dimensions.

LAKES AND PONDS.

Let us now consider the formation and furnishing of the large lake or pond, as representative of the ideal water garden. The alteration of the configuration and formation of large lakes should be entrusted to a landscape gardener skilled in such works. A few notes may, however, be helpful to those who wish for suggestions in the converting and planting of the ideal lake for water gardening. Assuming that the lake has to be made, and that a goodly supply of water is obtainable or existent, for without this little can be done, and, further, that a water-bearing stratum of soil can easily be reached, the first consideration is that of position, and in deciding this the natural lie of the ground is a governing factor. Choose, if possible, a natural depression within view of the house, but quite away from it, arranging for one or more diverse vistas, showing various breadths of water in the landscape, and carry out the planting of the banks with the same end in view. The vistas may terminate with the lake at every point, unless there is an object worth revealing beyond it, but if the object dominates the lake it is better that the latter and its immediate environment should be the sole objective. A line of vision may cross a broad strip of water for the benefit of revealing an object of interest in the far distance without interfering with the value of either objective.

The shape of the lake is also a matter to be governed by the natural disposition of the ground. The ideal lake is one which shows a goodly breadth of water from several points of view, and yet presents an irregular margin. If the position chosen contains a few distant groups of trees already developed, the water oculd be so dealt with as to completely encircle one or more trees or groups of trees, and project the area of water between other groups to represent natural erosion. Thus planned, it is easy to secure a shape that can only be described as irregularly serpentine, the width much distended at intervals. Any attempt to make a perfectly round, square or oblong lake is never satisfactory, and generally involves endless trouble in arranging plants and trees to destroy the formal outline.

The nature of the plants for the water garden and the best positions for them to occupy, call for treatment at greater length. The average gardener first directs attention to the extreme centre of any plan he may devise—a good plant or bold group "for the centre" becomes almost a law; but in the best interests of a water garden the centre must be left alone. Quite two-thirds of the surface of every lake or large pond designed for ornament must be left unfurnished. The expanse of water is sufficiently ornamental without the planters' aid, and any aquatics that may be grown should be planted near the margins only, and even then they should be in big detached groups. Trees, shrubs and tall grasses on the banks should have a clear expanse of water at their feet, to lend additional charm in their reflections on the water's surface.

Aquatic plants should occupy the bays and shallows around the margins, and these, too, should occur in masses and, reaching the water's edge, join with the adjacent bog and marsh plants. Broader openings may, with advantage, be left where the turf may reach the water's edge, especially in places where a good view of the lake is possible from the house or terraces, and in such vistas a few of the rarer aquatics and marsh plants could be planted, provided they were quite of small growth. *G. B. Mallett.*

(*To be continued.*)

MARKET GARDENING.

GRAPES.

THE Belgian and Channel Island Hambro's and the first supplies from Worthing were on the market together. How does this affect the home grower? Not at all if his are of better quality. This is the whole pivot of the matter, and with a bulk of cheaper or inferior Grapes to face, let the Worthing and other home growers strive to produce the best. A proof of this is to be found in May and June, when, with a free supply of Channel Island Grapes, say at 2s. per lb., a near home-grower with fruit of first-class quality commands double that price.

TOMATOS.

CROPS intended to pay for growing must be of the best quality, yet how many growers are there who to-day are courting failure by their non-observance of the ordinary routine of soil—or border—culture before planting.

Labour is an expensive item, and returns per weight are lower than formerly, but if a crop will not pay to grow well, it will be less profitable on rougher lines.

Accidental success is too often the cause of later failure: thus a good return may for once be had from a rough style of culture, and this may tempt the grower to extend the practice, but very rarely does he succeed with these methods the next year. Depressed markets and low prices should only stimulate the careful grower to strive for a still better crop, always remembering that the best quality produce will always sell first.

SPIRÆA "WHITE QUEEN."

THIS variety, for which Messrs. J. Veitch & Sons, Ltd., obtained a Royal Horticultural Society's Certificate, is proving itself to be a good market-plant. I have seen it in the market for some time past, and on the 12th inst., when calling at the Orleans Nursery, Twickenham, Mr. J. Bruckhaus spoke of it most highly. Some 1,000 plants have passed through his hands this season, and have proved to be very remunerative.

With a dozen heads of flowers, with clean, dense foliage, it stands out well as a market pot-plant. By comparison with other varieties it is a very decided advance. *Stephen Castle.*

NARCISSUS PEARL OF KENT.

SINCE the advent of Narcissus albicans we have become quite accustomed to white Trumpet Daffodils, and following in the line of such grand flowers as Loveliness, Peter Barr, and others, there are two new flowers, both white, and both sufficiently meritorious to gain the Award of Merit from the Narcissus Committee of the Royal Horticultural Society. The one was shown by Miss Currey, under the name of Mrs. Robert Sydenham; the other, an illustration of which we present in fig. 120, was raised by the Rev. G. P. Haydon, at Westbere, in Kent, and appropriately named by him Pearl of Kent. It is an excellent flower in every respect, and among white Ajax kinds may be regarded as superlative. It possesses remarkable vigour, and is tall of stature. We may liken it to a giant cernuus, and as the ground colour is as pure as that of Peter Barr, and the form as comely as that of Madame de Graaff, it will readily be seen that it is a great acquisition. The parents are said to have been Madame de Graaff and Monarch.

LEAVES FROM MY CHINESE NOTE-BOOK.

A JOURNEY IN EASTERN TIBET.

(Continued from page 259.)

June 11.—It rained most of the night, and dark, heavy mists hung about the valley as we resumed our journey. Our missing man did not arrive last night, and we made arrangements with our host to send out men to search the country. We gave the chief a couple of rupees and a tobacco box, and presented trivial gifts to half-a-dozen of his retainers, and left them all happy and satisfied.

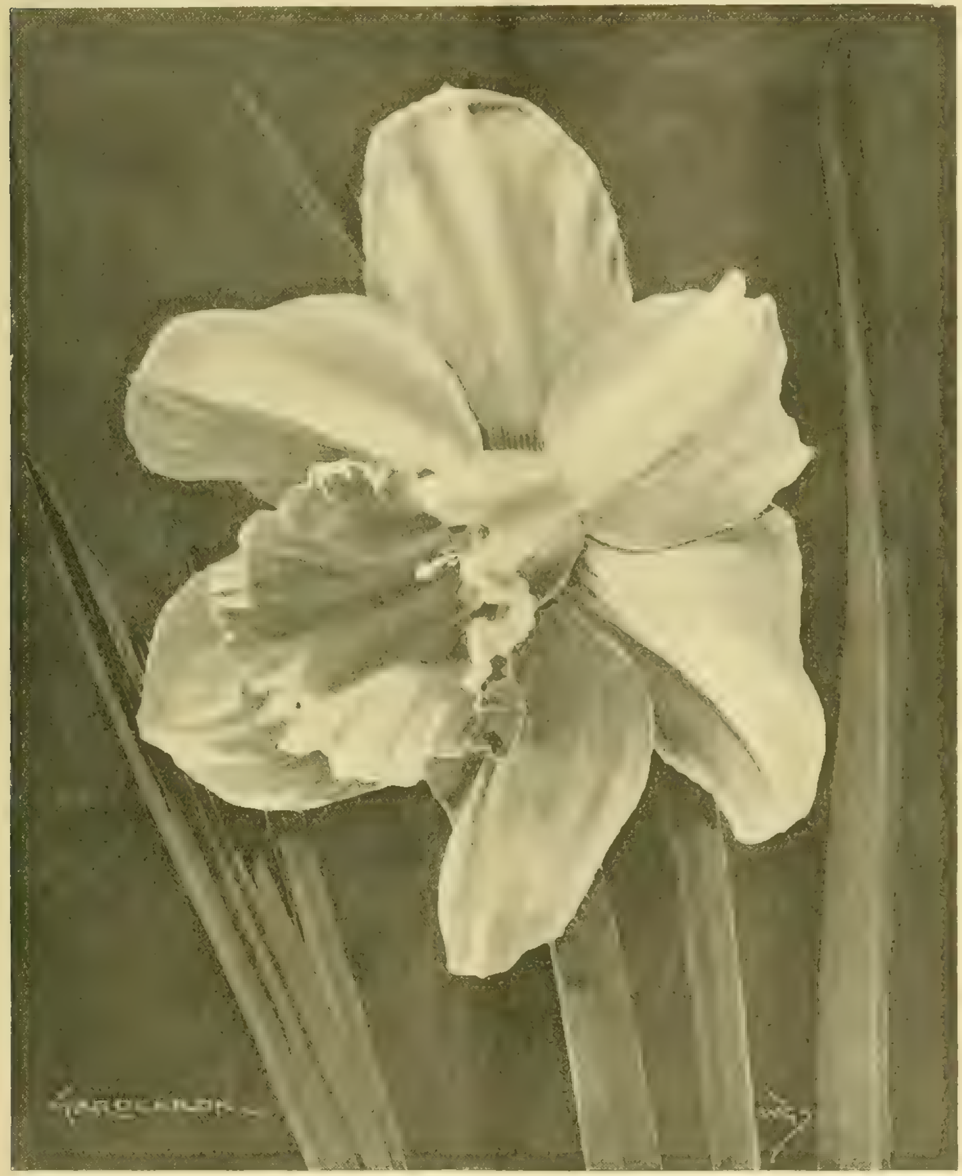

FIG. 120.—NARCISSUS PEARL OF KENT.

Flower scape, 11 inches high; perianth white, 4½ inches across; trumpet, 2 inches long and 1½ inch across at the mouth; width of perianth segments, 2 inches. (For text see page 292.)

Our road was of the easiest through a wide and sparsely-cultivated valley, flanked by mountains covered with snow to within 500 feet of the valley. We passed several Tibetan farmsteads and many ruins, and about four miles from An-Tam-pa a very fine Obo erected to the memory of a local Tibetan who distinguished himself at Lhassa. The architecture was essentially Indian in character.

Just below the Obo we crossed the stream by a wooden bridge, and about a mile on from the bridge reached a Tibetan village (alt. 12,000 feet), and turned up a side valley to the right. We now left the stream, which rises in the Cheh-to pass, and ascended a small tributary. The main stream joins the Yalung below Hokeou, and a road to Yunnan follows the left bank.

We journeyed through a flat and partially-cultivated valley some 500 yards broad. Fields of Barley and small patches of Peas were fairly common, fenced in by hedges of Gooseberry and Spiræa. Remains of forests were evident on the opposite bank of the stream. The grassy meadows were gay with Anemones, Buttercups, and purple Erigeron. In heathy places a Polygonatum and Cynanchum were common. A tiny Androsace, with flowers of varying shades of red, covered acres of the wayside.

At 2 p.m. we reached Tongolo (alt. 12,000 feet), our halting-place for the night. This village was the largest *en route* thus far, and is situated at the mouth of a side valley. The plain at the point of union of the two valleys was probably a mile broad, and surrounded by scrub-clad mountains. Near Tongolo a species of Cherry, with scaly bark like a Birch, was common, and around houses occasional trees of Populus euphratica occurred.

The mountains flanking the side-valley above Tongolo were covered with forests. Having completed the necessary arrangements for remaining the night, we visited the forest, but heavy rain quickly forced us to return. The forest was composed of Silver Fir, Larch and Birch of small size, with their stems and branches draped with grey pendent Lichens. The Lichen is Usnea barbata, and is known to the natives by the appropriate name of "Fairies' Scarf" (Mu-lu-ssu). The Silver Fir, Abies squamata, is a very singular species, with reddish, scaly bark and purple cones. The wood is reddish, very resinous, and valued for building purposes. The Tibetans call it *To-ma* (see fig. on p. 299). The Larch is *Hungsha* of the Chinese, and is probably Larix Potanini [see *Gardeners' Chronicle*, March 24, 1906, p. 178]. At Tatien-lu it is esteemed the most valuable timber for general building purposes. Several species of Rhododendron form the undergrowth in the forest. The Tibetan name for these shrubs is Ta-ma, and they consider them poisonous to cattle. On the margin of the forest bushes of Pyrus, Viburnum, and other shrubs occur.

Of herbs the most striking were Meconopsis Henrici, Incarvillea Principis, Cypripendium tibeticum (Bu-tee-to), and Lilium lophophorum (Tên-lung). Many other less striking but equally interesting plants were found, such as various species of Primula, Saxifraga, Potentilla, Veronica, and Fritillaria. But perhaps the most interesting plant of all was Cypripedium guttatum. This charming little Orchid, with its flowers blotched with dark-reddish pink and pure white, was very abundant hereabouts, and associated with it I collected a pure white form. This Lady's-slipper has a remarkable distribution, extending from central Europe, through temperate Asia, to Alaska! Near Tatien-lu I collected Cypripedium arietinum, a species found also in Canada and North-East United States. These two species of Cypripedium are probably the most widely-diffused members of the family, and constitute an interesting study in plant distribution.

June 12.—Last night, soon after 6 o'clock, the soldiers left behind at Tizou came up bringing in the loads carried by our missing man. Shortly after the soldiers the man himself, more dead than alive, limped in. He had carelessly taken the wrong path from the head of the Cheh-to pass, and had experienced a very rough time. Mists hung about the mountains and valleys, and threatened to turn to rain as we set out at 6 a.m. The sick man was left behind, for he was quite unable to tackle to-day's pass. We ascended a narrow valley with steep cliffs on one side and woodland on the other. The woodland consisted of the Silver Fir above mentioned, with Spruce, Birch, evergreen Oaks, and Rhododendrons. In places Meconopsis integrifolia was abundant. I noted that bees are very fond of the pollen of this plant, a dozen or more being frequently found in a single flower.

A sharp bend to the right and our valley merged into a ravine, at the head of which stands a dilapidated Tibetan homestead. The sides of the ravine were covered with fine Conifers, prominent amongst which was the Abies, with loose, scaly, reddish-coloured bark. Leaving this house, we made a steep ascent, winding our way around the mountain-side. Our road wound through a wood of Abies and Picea, in which were countless bushes of Rhododendron, 8 to 15 feet high and as far through, one mass of white flowers, luxuriate. Snow laid on the ground all around us, but the Rhododendron flowers were perfect. The Picea and Abies give out at about 14,000 feet, but the Rhododendrons ascended another 500 feet. A species of Pyrus, with narrow, pinnate leaves and corymbs of white flowers, was common up to 14,000 feet. Of herbs I only gathered a fresh species each of Primula, Saxifraga, and Anemone. Near the head of the ridge Willows (still leafless), dwarf, prickly scrub-Oak, Juniper, and the heath-like Rhododendron were the only shrubs.

Crossing the ridge, alt. 14,800 feet (thermometer 48° F.), we reached an extensive plateau, through which a considerable stream flows in a south-westerly direction. The plateau was very marshy, covered principally with grass, and affords excellent pasturage for yak and sheep. A steady ascent across this "grassland" brought us to the head of the pass—15,050 feet above the sea. The heath-like Rhododendron and dwarf Juniper were the only shrubs reaching the head of the pass, and these were reduced to a few inches in height. Meconopsis integrifolia (the Ja-po-mei-to of the Tibetans), M. Henrici, and Incarvillea Principis all reach the head of the pass, but are reduced in height to 4 to 6 inches. A tiny and very curious species of Primula and Spencera ramulana, with its handsome yellow, Potentilla-like flowers, were the only fresh plants gathered on the plateau. Fritillaria Roylei, a species of Saxifraga, and a Gentian were fairly common, and acres of Caltha, Androsace, and variously-coloured Anemone carpeted the ground on all sides. Snow laid in patches, but there was less than might have been expected from the altitude. Dank mists obscured our view, but, as far as our vision ranged, nothing but "grassland" was visible. Whilst crossing this plateau a thunderstorm overtook us. It was bitterly cold, and we were quickly drenched to the skin. Our Tibetan followers, clad in thick felts and sheepskins, were much better off, and appeared to enjoy the storm and our discomfiture. Having crossed over the pass, we quickly entered a fine forest, and descended through it by a precipitous path to the bed of a torrent, which rises in the pass itself. The forest was, in its upper parts, composed entirely of the Abies with reddish, scaly bark, with Rhododendrons forming the undergrowth. The branches of the trees were draped with "Fairies' Scarf," and Mosses and Lichens covered the rocks, which are of slate, vertically inclined. Everything denoted a more humid climate on this side of the pass. The tree limit was 14,500 feet—an altitude much higher than I have noted it before.

From the point where the road strikes the bed of the torrent, the forest gradually assumed a mixed character. A species of Picea wrests supremacy from the Abies. Birch was abundant, and in the bed of the ravine Willows and Cherry trees were common. The scenery was very fine—as far as the eye could reach nothing but forests of gigantic Spruce and Silver Fir. Fallen giants were strewn about on every side, and on their rotting trunks huge bushes of Rhododendron luxuriate.

Descending by a more or less easy road, through a storm of hail and rain, we reached the tiny hamlet of Orang-che (alt. 12,200 feet), our halting-place for the night. Around Orang-che every possible bit of the ravine—it could scarcely be called a valley—was cultivated. The crops of Wheat and Barley looked very healthy, though only a few inches high. The cultivated patches were fenced by hedges of wild Gooseberry and Rosa sericea. In the surrounding forests medicinal Rhubarb (Rheum officinale) was said to abound, and large deer (Wapiti) were fairly common. Near our hostelry I gathered two or three fresh plants, including Berberis sp., Euphorbia sp., Corydalis sp., Ribes sp., Primula sp., and Draba sp. *E. H. Wilson.*

(*To be continued.*)

THE ROSARY.

THE VARIETY AIMEE VIBERT AND OTHERS.

This is still a good Rose, although distributed by Vibert so long ago as 1828. Few Roses flower so abundantly as this climbing white Noisette. In August last, out of ninety varieties of climbing and rambling Roses of all sections, not one was so effective in these gardens. It is almost thornless, and the pure white flowers are borne in immense clusters, so much so that the growths need to be supported. Being a true Noisette it is very hardy, requiring no protection in winter. When planted in combination with the rich carmine-coloured Longworth Rambler, syn. "Dechamps," the contrast is very striking. Many fine Noisette varieties are hybrids, and these require protection in winter, unless growing in a very sheltered situation. Those of vigorous growth are excellent plants for covering fences or pillars, and if worked on high standards they are very attractive as weeping specimens on the grass. The scent of these Roses is as agreeable as that of any Roses, and the colours range from pure white through the various shades of copper rose, yellow, reds, to carmine and crimson. *W. H. Clarke, Aston Rowant, Oxon.*

AUBRIETIA TAURICOLA ALBA.

There are many positions where the dwarf Aubrietia tauricola can be employed, its neat habit and profuse flowering rendering it of great value. It was thus with pleasure that some of us were introduced to A. t. alba, as a white Aubrietia of this habit is particularly acceptable in view of the superiority of the Aubrietias to any of the species of Arabis, especially as the white Aubrietia would flower at a better season to associate with the purple and red flowered species and varieties of its genus. Unfortunately, however, A. tauricola alba is not absolutely white as the flowers pass off from pure white soon after opening to white flushed with lilac, and are finally entirely lilac or pale purple. Although this variety is, therefore, not all we desire in the way of a white Aubrietia, it is a very pleasing little plant. *S. Arnott, Sunnymead, Dumfries.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Such tall growing plants as Epidendrum radicans, E. Ellisii, E. xanthinum, E. crassifolium, E. evectum, E. arachnoglossum, E. ellipticum, E. elongatum, E. cinnabarinum, E. Schomburghi, E. paniculatum, also the interesting and handsome hybrids; E. O'Brienianum, E. dellense, E. xantho-radicans, and E. Boundii are all in bloom at this season, and when grouped together make a very effective display. All of them are easily cultivated, and well deserve extended cultivation, being exceedingly useful for cutting and for decorative purposes generally. The flowers are produced in terminal clusters, and they last a considerable time in good condition, some even for several months. At Burford such varieties as E. Schomburghi, E. Ellissii, E. O'Brienianum and E. Boundii have been in flower since the middle of January, and the panicles of brightly-coloured flowers are likely to continue fresh for several weeks to come. All of these species and hybrids may be repotted after the spikes have been cut, or as soon as the plants recommence to grow. The potting material should consist chiefly of sphagnum-moss, with a few lumps of fibrous peat, some small crocks and silver sand added. The drainage should be good. All of the plants mentioned grow freely in a light, airy position, either in the Cattleya or intermediate houses, and when in full growth copious root waterings become necessary; it is also advisable to use the fine sprayer over the plants very frequently during the summer months. The rare E. Endresii is also in bloom; its small waxy-white flowers, marked with violet on the lip, are always appreciated. The plant requires almost the same kind of treatment as those enumerated above, but it prefers a rather damp and shady position, and the under sides of the foliage should be sponged very frequently, so as to keep them free from red spider. The distinct hybrids E. Endresio-Wallisii, E. elegantulum, and E. Clarissa, which have similar characteristics to E. Endresii, require identical treatment. The dwarf growing E. glumaceum is also in bloom. The well-known Epiphronitis Veitchii is a general favourite, and it produces its deep crimson flowers at this season, but in some collections, where a number of plants are cultivated, flowers may be seen at almost any time of the year. The plant will grow and flower freely in the intermediate house and should be elevated as near to the roof glass as possible. When growing vigorously, some of these Epidendrums, especially E. radicans, E. xanthinum, E. O'Brienianum, E. Boundii, also Epiphronitis Veitchii produce young aerial growths from the old stems and flower spikes, and when these off-shoots begin to produce roots from their base, they should be cut off and potted in well-drained sphagnum-moss. The handsome and distinct E. prismatocarpum will grow well in the Cattleya house; its flower-spikes are now pushing up, and the plant, if well rooted, will require plenty of water until the flowers open, when the quantity should be gradually reduced. E. vitellinum will also be sending up its flower-spikes; it requires much the same treatment as the preceding species, but should be placed in a light, well-ventilated position among the cooler Orchids.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Inarching Vines.—It sometimes occurs to a gardener that he has got a variety of Grape that is not satisfactory, and that he may graft or "inarch" on to this vine a variety possessing greater value. Where this work was not carried out when the buds were dormant, it may be done at once. The best canes for use as scions in such a case are those that were rooted in January, and which are now occupying 7-inch and 8-inch pots. To perform the operation of inarching, the pot vine should be placed in close contact with the rod or young growing shoot of the old vine. Then cut with a sharp knife a small portion off each shoot, extending about 2 inches in length; make a tongue in each piece of young wood, and place one in the other, binding them tightly together with thick raffia and a little moss. Keep the pot containing the young vine well supplied with water during the growing season, and syringe the moss occasionally to prevent the wood becoming dry. Most people are fond of Muscat of Alexandria, and this, therefore, is the Grape to increase. It succeeds well when worked on the Black Hamburgh, and I am going to try it on the Grizzly Frontignan, which seems a robust grower and has a good constitution. At the same time other varieties may be improved; for instance, Duke of Buccleuch succeeds exceedingly well on Alnwick Seedling, and Barbarossa (Gros Guillaume) put on Buckland Sweet-water finishes most satisfactorily. In my opinion, any unsatisfactory sort might be improved if worked on to the old and reliable Black Hamburgh stock.

Bananas (Musa).—Where there are large and lofty plant stoves, room might be afforded for one or two plants of this nutritious dessert fruit. English-grown Bananas are far superior in flavour to those which are imported. Old plants send up several suckers each, and these should now be taken off with a little bit of root attached. The strongest suckers should be selected and potted into 8-inch pots, using a rich compost of good turfy loam, half-inch bones, and a little decayed cow manure. When they have filled the pots with roots, transfer them to a large box or slate tank measuring about one yard square and the same in depth. In cases where it is possible, place these over hot-water pipes to provide bottom heat. The compost used for the boxes should be the same as when potting was done, but the ingredients need not be broken up to the same degree. The soil should be warmed through before planting is done. Let plenty of water be given to the roots during the growing season, and the plants kept in a hot and moist atmosphere. When the "fruit" is swelling, the plants will need more water than at any other time, and alternate doses of liquid manure and guano may be applied. It is a fine sight to see a bunch of "fruit" from 70 to 80 lbs., and the "fingers" all about one size. These should now be severed from the plants, if changing colour, and be hung up in a warm and moderately dry atmosphere to finish ripening, offering them for dessert as fast as they become ready. Musa Cavendishii and M. sapientum are two good varieties to grow.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Stephanotis.—In many gardens this plant is grown under conditions unfavourable to its flowering, even moderately well. The atmosphere of an ordinary plant stove is too warm and moist, and the plants are often subjected to an excessive degree of shade, and they fail to obtain a season of complete rest, which is of the utmost importance if the plants are to flower abundantly. If it is wished, however, to grow small plants into large ones quickly, then the heat and moisture of the stove are certainly favourable to rapid, and even luxuriant, growth. After a Stephanotis has rested through the winter months, it may be started into growth in a hot and moist atmosphere, but as soon as the growths have attained to a length of 8 to 10 inches the plant should be gradually inured to a lower temperature, using less fire heat at night, and admitting more air during the day. The atmosphere being also drier, the growths made will be short-jointed. Avoid training the shoots too thickly together, as this would provide one of the best harbours for mealy bug that can possibly be had. The best method I find of training large plants grown under the roof is to attach the shoots to strings, allowing only a sufficient number to fill the allotted space without overcrowding; thus insects may be easily kept down, because it is possible to syringe every portion of the plant. If the shoots are trained on this principle, they will not become twisted together and unmanageable. The potting materials should consist of fibrous loam, with some dried cow manure, charcoal, and sand. If this treatment be applied, the supposed shy flowering varieties will bloom profusely.

Removing Forced Plants out of doors.—Owing to the cold and changeable weather, it has been necessary to keep indoors the bulk of hardy plants which have been forced and have passed out of flower. This has caused the available space indoors to be overcrowded, but now that the temperature outside is becoming more favourable, it will be safe to transfer the stock and put it under the shelter of a wall or hedge, where the plants may harden and mature their growth previous to being planted in the quarters reserved for them. A little study in arranging the plants will be needed, because the more tender subjects should be placed where they will be less exposed to cold winds. Previous to turning the plants outside, let each one be examined and any long, misplaced growths should be shortened back in order to maintain the symmetry of the plants. These specimens which have been forced this season should not be lifted again next autumn.

Bouvardias and Fuchsias.—Those Bouvardias which were propagated early should now be potted on from the "cutting pots." If any of the old plants are retained, give them occasional waterings with liquid manure. When potting Bouvardias, let a little bone dust be mixed in the compost. Any strong shoots which may eventually take the lead should be stopped. Fuchsias require similar treatment.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Spring Bedding.—The taste for "Spring Bedding" has largely developed in recent years, and in many places it has become a feature in the garden management. The desire to have the garden looking bright and gay in the early part of the year as well as in the summer and autumn months, is one to be commended, and by the exercise of a little foresight and preparation spring gardening can be done so easily and inexpensively that the system ought even to be more common. Apart from bulbs, which are invaluable for this style of gardening, there are numerous hardy early-flowering plants without which no spring bedding would be complete. It is impossible to imagine anything more charming than the rich colouring provided in the spring by bold masses of such old-fashioned flowers as Aubrietia, Polyanthus, Daisy, Alyssum, Forget-me-Not, Tufted Pansy and Wallflower. In addition to these, the Iberis, Arabis, Caltha, Doronicum, Silene, Auricula, Gentian and the dwarf early Phloxes are all beautiful spring bedding-plants. Preparations for next year's display must be commenced at once. Now is the time to propagate the Aubrietia by taking cuttings of half-ripened wood, and dibbling them into 3-inch pots—four or five into each pot. Any light soil will do for the cuttings to root in, but it should be made very firm. Place the pots in a cold frame, keeping it closed and shaded until the cuttings have made roots, after which time admit an abundance of air. When the cuttings have become thoroughly established plant them in the open ground singly in nursery rows 6 inches apart. By the end of September they will have formed robust, sturdy plants ready for placing out in their flowering quarters. In making the cuttings care should be taken not to remove the flower buds, but to allow them to develop on the cutting, as this appears to assist their striking freely. By these means thousands of Aubrietia can readily be propagated. For spring bedding Aubrietia deltoidea Campbelli is by far the best. It has a fine compact habit, and becomes literally smothered with its lovely, violet-blue flowers, and is particularly well adapted for associating in masses with the white Arabis and Alyssum saxatile. A. Hendersoni is a synonym of Campbelli. There is a new variety named Dr. Mules which is similar, but of a richer shade of colour. Arabis albida and A. alpina are very profuse and showy white-flowering plants, but compared with Arabis alpina flore-pleno, a garden variety of recent introduction, are not worth growing. This double-flowered Arabis is so easily propagated, and of such easy culture, that it should be substituted in every case for the single-flowered species. Its flowers resemble those of the double Stock, which are pure white, and last for a long time in perfection, whereas the ordinary Arabis is of brief duration. Viewed from a distance it reminds one in effect of the flowers of the Lily of the Valley. Its propagation is carried out precisely as detailed for Aubrietia, and should be proceeded with at once.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Wall Fruit Trees.—Inspect these carefully and regularly, because the young shoots will indicate by their degrees of vigour to what portions of the tree an extra amount of sap is flowing. Early attention is very necessary to trees which are trained vertically, for if some shoots of these are not checked, they will soon monopolise an undue share of sap. An equal degree of vigour should be encouraged over all the tree by stopping the stronger growths at 6 inches, and if necessary by taking up two growths instead of one. All shoots that will not be required permanently should be removed as early as possible in order that the weaker ones may thus be strengthened. Horizontally trained trees do not grow so strongly in any particular place, but sometimes the upper branches assume a pronounced lead, and therefore the strongest of these shoots should be pinched quite early. The new shoots require to be nailed or tied in whilst they are still small, so that they will not get broken by the wind or other causes. Where old spurs have been cut off from Plum or Pear trees, and shoots are now growing well and strong, these should be stopped at the third or fourth leaf, and this will induce them to form other spurs close to the main branches of the tree, which will possibly form fruiting wood for another season. There is nothing to be gained by allowing a lot of strong growths on any tree, even if there be no fruit. Excessively vigorous wood seldom does produce fruit, but by constant stopping, fruit buds are formed and the tree consequently becomes fertile.

Insect Pests.—Much damage has been done by frost to the fruit blossom here, especially to such blossom as was unprotected; but an equal amount of damage will be done by insects if the trees are not carefully watched. This matter is one of the greatest importance during the month of May, when attacks are made on the young growths that are apt to be crippled by cold winds and frost. If the insecticides are mixed and put into the garden engine and a few yards of hose attached, the engine can be pushed along the walk and pumped by one person; another can walk along the 4-foot way under the wall and very easily distribute the liquid. The majority of pumps put into the machines on the market are not nearly powerful enough, and all should see that a sufficiently powerful pump is placed into the so-called garden engine. Many of the engines on the market are mere toys.

Black Currant Bud Mite.—Examine all infested trees and pick off [and burn] the swollen buds, it being during this month and early in June that these mites change their quarters. Afterwards spray the bushes thoroughly with a very strong solution of extract of quassia, wetting every portion of the tree. If this is done in a thorough manner, and the bushes are not in too bad a condition, the disease can be practically eradicated by the autumn, but no half methods will accomplish this end. If the bushes are in a debilitated condition, a good mulching of manure, as advised in a previous Calendar, will help them.

Suckers.—Remove these from the base of any tree from which they may be growing, cutting them away as low down below the soil as possible.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Brussels' Sprouts.—This vegetable, being of the first importance for winter supply, if by any chance the first crop has failed, every effort should be made to make good the loss, either by sowing seeds again in boxes or by buying plants. Do not have the soil very rich, but plant firmly, placing the plants 2½ feet each way from each other. If any old plants which are now exhausted are still in the ground, clear them away at once, and prepare the soil for another crop by applying a liberal quantity of manure, and digging it over.

Chives should be cut over at regular intervals, that the produce may be as tender as possible for use in the salad bowl. Divide up any old surplus plants to increase the stock and obtain vigorous growth. Such plants should be put out in lines drawn at 12 inches apart, allowing 9 inches between each plant in the line. A shady position is best for plants required to yield a supply late in the season.

Endive.—Although full early for the general crop, a small sowing of seed should now be made of both the Batavian and Fern-leaved varieties. Afford this crop plenty of water to prevent the plants running to seed, as the Fern-leaved variety is apt to do at this early season. Sow the seeds in an ordinary seed bed, and transplant subsequently as is done with Lettuces.

Kohl Rabi.—When used quite young, this vegetable affords an excellent and useful change. The plants need to be treated in the same way that Cabbages are cultivated. Make several small sowings at intervals from the present time to obtain a long succession.

Seakale.—The young growths proceeding from the crown of the cutting recently planted will require thinning so as to leave one to each plant. Encourage them to grow quickly by applying nitrate of soda, which may be hoed into the soil. As this fertiliser requires warm weather before the plants can make full use of it, good results should be noticed in the near future. Where Seakale is being blanched in the permanent growing quarter, see that the blanching material is made secure to prevent birds scratching it about. A good depth of leaf-mould should be kept constantly on the plants; the smallest amount of light or an excess of air would soon ruin the crop.

Late Peas.—The latest varieties may now be selected to give the desired succession, and those that are as nearly as possible immune from the attacks of mildew are those that should be first considered. Autocrat stands in the front rank of these, the Gladstone also being first-rate. Sutton's Late Queen is of the Ne Plus Ultra type, and one of the best. These varieties having intensely green foliage, and being strong, sturdy growers, are amongst the best to resist mildew. Seeds of the French Sugar Pea should be sown to afford variety, for it is a choice dish when well served.

Late Broccoli.—Where it is desirable to clear the ground, and a few plants still remain unfit for use, these may be lifted and placed behind a north wall, where they will finish off in due course, with the additional advantage of prolonging the season and joining hands with the early supply of Cauliflowers. Late Queen and Latest of All have been best out of many late maturing varieties grown here.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	May 12	Dutch Gardeners' Soc. meets.
MONDAY,	May 14	United Hort. Ben. and Prov. Soc. Com. meets.
TUESDAY,	May 15	Roy. Hort. Soc. Coms. meets. British Gardeners' Association Executive Council, 4 p.m.
WEDNESDAY,	May 16	Roy. Bot. Soc. Show at Regent's Park.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick—54·3°.

Actual Temperatures:—

London.—*Wednesday, May* 9 (6 p.m.): Max. 62°; Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 10 (10 a.m.): Bar., 29.9; Temp., 50°; *Weather*—Dull, with slight rain.

Provinces. *Wednesday, May* 9 (6 p.m.): Max. 57° South-east England; Min. 49° Ireland, north-west.

SALES.

MONDAY—

Freehold Fruit Farm and Market Garden, with Residence, foreman's House, 3 Cottages, 34 Vineries and greenhouses, and buildings, area about 24 acres; also 6 acres Meadow and Woodland, situate at Wrotham, Kent, by Protheroe & Morris, at the Mart, Tokenhouse Yard, E.C., at 1.

WEDNESDAY—

Begonias, Gloxinias, Gladiolus Pinks, Carnations, Palms, Plants, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY—

Cattleya, Lælia and L. Cattleyas Hybrids, Established Orchids in variety, Imported Dendrobes, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Balance in Flowers. Is it really undesirable for us to admire a flower unless its several parts bear an exact relative proportion to each other, and conform exactly to the artificial standards laid down by the florists? This question was raised again recently at the dinner which followed the Midland Daffodil Society's show at Birmingham. Mr. W. Pope read a paper in which references were made to the "Big" Daffodil. He stated that there had been no exact standard laid down by the florists as to what a Daffodil flower should be—such as is followed in the case of Carnations, Auriculas, and other flowers—but he believed that some standard was called for which would be a guide alike to raisers, exhibitors, and judges. Apart, however, from these florists' varieties, there was a market for the largest flowered Daffodils, which, as they invariably appealed to the public, were consequently of profit to the cultivator.

A subsequent speaker, whose knowledge of Daffodils is only equalled by his skill in growing them, turned the discussion from the question of mere size to one of proportion in flowers. He pleaded for an appreciation of symmetry in the different parts of the Daffodil flower, and for the rejection of all those in which there was a higher degree of development in the perianth than in the trumpet, or in the trumpet than in the perianth. He described as inferior a flower in which one's attention is first excited by this feature or that. The flower should be of a character that will appeal to the artist as a whole, and as a well-balanced flower. The fine perianth in such a case does not appear to be specially large, because it is equalled by the development of the trumpet: nor the trumpet seem excessive, owing to the balance afforded by the perianth.

But the question might be asked, what is the proper balance? How can there be only one balance in such varying flowers as Daffodils! Strict proportion might be attained in a case where the cup or trumpet was exactly of the required length to touch an imaginary half circle drawn from the extremity of the perianth segments on one side to the extremity of those on the other. But if this alone is a well-balanced flower, then all the varieties of the Poeticus type, and many of the trumpet Daffodils are ill-balanced. If, instead of this, another rule were to be adopted requiring the trumpet to be as long and no longer than the perianth segments, such a rule could only apply to the Magni coronati Daffodils. The question of what is balance and proportion in a "cup" Daffodil would still remain to be settled. It might also be urged that if the proper balance is seen in such a trumpet Daffodil as we have described, how can there be any satisfactory balance at all in the true Narcissus poeticus, which has a shallow crown in place of the trumpet (but with well-developed perianth), any more than in N. Bulbocodium, where the "hoop petticoat" is abnormally developed at the expense of the perianth?

It appears to us that such balance and regularity as were advocated can only be found in flowers that are more or less reduced to a condition lacking in individuality, and therefore of interest, and that in any case the "standard" cannot be the same for all the sections of the genus.

Florists are, of course, entitled to their point of view, but we must not be so far led away by their ideals as to be unable to look at a flower from a different standpoint. The naturalist is ever on the look-out for development, and he may like this flower because it shows the greatest development that has yet occurred in respect to one part, and another flower because it illustrates exactly the same of another part.

From the point of view of beauty alone, it is frequently the case that irregular flowers, or ill-balanced flowers, as our friends would call them, are among the most charming. Consider, for instance, a collection of Orchids, how attractive are their various, almost endless, forms—and yet, how irregular, and ill-balanced as in the Selenipediums; how wonderfully the same purpose is attained by widely different formation! How wondrously the lip is developed in this Cattleya, or Oncidium, and how insignificant appear the petals and sepals. Nevertheless, we admire the flower especially for its magnificent labellum, and are content that the plant has specialised its effort in a particular direction, and has thus become less commonplace than it would otherwise have been.

There is another matter to be borne in mind in connection with the selection of varieties that conform to the rule of thumb type, for it often leads to the rejection and, we fear, destruction also, of the others. In this way we are liable to throw away much of the gain that should follow the work of the cross breeders. Varieties of Chrysanthemums, Daffodils, and other flowers, also of fruits, which have been raised from seeds, are frequently destroyed in large numbers, an instance of which was referred to on page 264, because on their first trial their characteristics have been judged to be inferior. But what potential qualities many of them may possess is shown by the Mendelian experiments, which go to illustrate in how many instances variations may, nay, even must, occur that, being encouraged, would eventually prove of great importance, even from the commercial point of view!

But to return to the Daffodils: if such a standard of merit were ever to be imposed, it would be imperative, as we have said, that a different standard should be drawn up for the different groups, and in that case they might be made practicable for the groups as groups. But how would even these suffice when Mr. Engleheart and others have, by their hybrids, linked up the sections until there is every degree of development from the Crown to the Cup, and from the Cup to the Trumpet Daffodils?

The larger groups may be differentiated one from the other even in the case of many of the crosses by the shape and proportion of the perianth-tube which intervenes between the ovary and the perianth-segments. On this point we may have more to say on a future occasion.

Our Supplementary Illustration.—Kalanchoe Dyeri is a species from British Central Africa, and was first described by Mr. Brown in the *Gardeners' Chronicle* for June 4, 1904, p. 354. It was sent to Kew in 1902 from Nyassaland, and flowered there last summer. K. Dyeri is allied to K. Somaliensis, and is one of the finest species yet known, as will be seen from the illustration, which has been drawn by Mr. Worthington Smith from specimens kindly supplied by Messrs. Jas. Veitch & Sons, Ltd. The plants appear to grow 2½ feet high, or even higher, and produce large corymbose cymes of pure white flowers, and spreading elliptic leaves 6 inches or more long, and 5 inches broad. For a detailed description of this fine species our readers may refer to the previous issue already cited.

Royal Horticultural Society.—The next meeting of committees will be held on Tuesday, May 15, in the Society's Hall, Vincent Square, Westminster. A lecture on "Flower Gardens in the United States" will be given by Professor Corbett, at 3 o'clock.

Kew Guild Dinner.—We are requested to remind our readers who are Old Kewites that the annual dinner will take place at the Holborn Restaurant on the 28th inst., at 7.30 p.m., and that the Secretary, Mr. W. N. Winn, would be glad to hear before the 21st from all who intend to be present.

Kew Bulletin.—There are welcome signs, not only that steps are being taken to make up for the delay in the publication of the volumes for preceding years, but also for the due issue of the parts for the current year. No. 3, for 1906, has lately been issued containing articles on the diseases of Beet and Mangold, by Mr. Massee, on the Botanical Institutions of Jamaica, together with a number of descriptions of new plants, many of them in cultivation, and a "decade" of new Orchids.

Small Holdings.—The Departmental Committee appointed by the President of the Board of Agriculture and Fisheries, to inquire into the subject of small holdings, held a sitting on the 3rd inst. Evidence was given by Mr. E. W. Stafford Howard, C.B., H.M. Commissioner of Woods and Forests, and Mr. H. M. Jonas, F.S.I., Cambridge.

Botanical Magazine.—The plants figured and described in the May number are :—

Lilium Duchartrei, *Franchet*; tab. 8,072. –A native of Western and Central China, with scattered, linear-lanceolate leaves, spotted stems and many-flowered panicles; each flower is mounted on a long stalk, recurved at the apex. The perianth is about 3 inches across, with strongly recurved oblong lanceolate segments, white with purple dots on the inner surface, and with a broad violet stripe on the dorsal surface. The bulbs were collected by Mr. E. H. Wilson for Messrs, James Veitch & Sons, at Ta Chien Lu, and flowered at Kew.

Primula Cockburniana, *Hemsley*; tab. 8,073, —This is a very remarkable species collected for Messrs. James Veitch & Sons, at Ta Chien Lu, and figured in our columns 1905, i., p. 345, fig. 137. It differs from all known species in the peculiar orange colour of its flowers.

Listrostachys hamata, *Rolfe*; tab. 8,074.—An Orchid from tropical West Africa, with erect stems, lanceolate, recurved leaves, sheathing at the base and drooping racemes of white flowers. Perianth, including the spur, about 2½ inches long, segments linear, lanceolate white, lip nearly of the same form, but with a long green spur hooked at the end. It flowered at Kew, to which garden it was introduced from Lagos by Mrs. W. T. Martin.

Genista dalmatica, *Bartling*; Kew, tab. 8,075.—A low growing, rigid, tufted shrub with spiny, hairy branches dividing into branchlets, which resemble pinnate leaves; flowers yellow in dense terminal racemes. It is a native of the Balkan Peninsula.

Euphorbia lophogona, *Lamarck*; Kew, tab. 8,076.—A curious succulent Euphorbia, with erect angular stems, marked with circular leaf scars, and provided at the angles with projecting lacerate processes (persistent stipules). The leaves are sessile, lanceolate recurved, the flowers; surrounded by rose-coloured bracts, have the usual structure of those of the genus. Native of Madagascar.

Royal Scottish Arboricultural Society.—The first part of the nineteenth volume has reached us. Its contents are too numerous and too varied to permit us to do more than mention them. They are mostly of a practical character, and some of them are similar to those which have appeared in the Transactions of the Royal English Society, a fact that is suggestive of the propriety of an amalgamation between the two societies. Mr. Elwes contributes a note on some Japanese and North American trees suitable for growing in British woodlands, and Dr. Schlich has reprinted his working plans for Alice Holt forest in Hampshire, together with a map of the plantations.

Irish Gardening.—We are pleased to find this newly-established monthly periodical maintaining its high character. The May number has a coloured illustration of the American Gooseberry Mildew, with a descriptive article by Prof. T. Johnson, the director of the Seed-testing and Plant Disease Station for Ireland. Mr. F. Moore contributes a serviceable note on the species and varieties of Rhododendron.

The Udo Salad Plant.—The catalogue of the Yokohama Nursery Company has illustrations of a species of Aralia A. cordata which is extensively cultivated in Japan. The young and tender stalks are eaten as a vegetable, and the full grown plant is 5 to 6 feet in height, and of an ornamental character.

The Flora Brasiliensis has been brought to a successful conclusion, and deserves to rank as one of the wonders of the book-world. This great work was begun in 1840 by von Martius, continued by Eichler from 1869 to 1886, and has been edited since 1887 by Professor Urban, sub-director of the Royal Botanic Garden and Museum of Berlin. The Flora consists of 40 folio volumes and no fewer than 3,811 full-sized plates. The introduction, contributed by Professor Urban, would, by itself, fill an octavo volume. In it he gives the biographies of 137 botanists and travellers who have worked in Brazil, and describes their various routes. He includes biographical notices of his coadjutors, with outlines of their principal works, an enumeration of the monographs comprised in the book according to their chronological order, and a catalogue of the families dealt with, and countless statistical notes. From these notes we learn that no fewer than 2,253 genera (of which 160 are described for the first time), 22,767 species (5,689 being new) are treated. The families containing the greatest number of species are Orchidaceæ, Compositaceæ, Leguminosæ, Myrtaceæ, Melastomaceæ, Rubiaceæ, Euphorbiaceæ, and Graminaceæ, the first with 1,455 and the last with 682 species. The 65 coadjutors, of whom 23 are still living, are for the most part German (38), the rest being apportioned as follows :—Austrian seven, Swiss five; English five, including the late Mr. Bentham, A. Bennett, and Mr. J. G. Baker and Dr. Masters; French four; Belgium two; Danish two; Dutch one; and Hungarian one. Of these, the greatest share of the work has fallen to Professor Cogniaux, of Belgium, who deals with Melastomaceæ, Cucurbitaceæ, and Orchidaceæ. The greatest thanks are due to the Brazilian Government for the support it has given to this monumental work, to the von Martius family, and to Dr. Urban for the zeal with which he and his collaborators have worked to bring the great task to completion.

Sale of Gardening Books.—At the four days' sale last week at Messrs. Sotheby's of books and munuscripts from the libraries of the Hon. Mrs. Skeffington Smyth and others, the following were amongst the works disposed of :—Sowerby's "English Botany, or coloured figures of British Plants, &c.," Vols. I. to XXV., 1790-1807, Index to 36 Vols. to 1814, and Supplement by Professor W. J. Hooker, 1831-34, with numerous plates, £20 (Quaritch); John Gerarde's "The Herball, or Generall Historie of Plants," enlarged and amended by Thomas Johnson, numerous woodcuts, 1633, £7 15s. (Edwards); W. Curtis's "The Botanical Magazine, or Flower Garden Displayed," from the commencement in 1793, and general index, 112 volumes with several thousand coloured plates, £51 (Quaritch); "The Profitable Art of Gardening, now the third time set forth, whereunto is newly added a treatise on the Art of Graffing and Planting of Trees," by Thomas Hyll, black letter, a large and sound copy, bound in calf-gilt, published by H. Bynneman in 1579, £8 15s. (Sotheran); "A New Herball, wherein are conteyned the names of Herbes in Greke, Latin, Englysh, Duch, Frenche, and in the Potecaries and Herbaries Latin," by Wylliam Turner, black letter, numerous woodcuts, published in 1551 by Steven Mierdman, £8 15s. (Bore).

Large Single Chrysanthemums.—We recently published (see p. 229) an article on this subject from M. Foukouba, head gardener to the Emperor of Japan. In the April number of the *Chrysanthème*, we find a similar article, with illustrations from photographs which did not reach us. One shows the flowers exhibited apparently on cardboard collars—horrors that we hoped were confined to Carnations. Our good friends the Japanese, with their native artistic feeling, should not copy our foibles.

Hortus Veitchii.—In noticing this most noteworthy book we incidentally stated that (unless we had overlooked the references) the *Manual of Orchidaceous Plants* was not mentioned. We now find that we had overlooked the references. A new edition of the manual, rearranged and brought up to date would be a boon.

Province of Manitoba.—Official and authoritative pamphlets setting forth the advantages offered to the settler have been received from the Department of Agriculture and Immigration. Manitoba is described as the greatest Wheat mart in the whole world, and as capable of affording comfortable and luxurious homes to the teeming millions of the sons of toil struggling for existence in the crowded districts of the East. This is rather high-flown language, but we believe it to be substantially true. The office of the Department is at Winnipeg.

South-Eastern Agricultural College.—A meeting of the Governors of the South-Eastern Agricultural College (University of London) was held at Wye, on Friday last, Lord Ashcombe, chairman, presiding. The Principal (Mr. M. J. R. Dunstan) reported that 101 students were attending the college. Mr. W. P. Wright, Kent County Horticultural Instructor, was appointed Superintendent and Lecturer of the Horticultural Department, for which a definite course is to be established. Five students from the college have passed the P.A.S.I. examination, and two old students passed the qualifying examination for the Fellowship.

Primula Greenwood Pim (see fig. 115, p. 276).—Mr. Smith, of Newry, writes us as follows :—"The Primrose sent you did not originate here, but was found growing wild by Mr. Greenwood Pim, and sent here to be nursed. The position of the stamens and style would lead to the possibility of self-fertilisation, but all the seedlings from it so far have been simple reversions to the type."

Trade Commissions.—We have sins enough of our own in this direction to answer for, but if we may believe the statement made in a letter from New York, things are no better, or even worse, in the United States, where, in some quarters, it is alleged that a system of "grafting" is practised. The "graft" is a secret commission, said to be paid by some of the less honourable dealers to dishonest gardeners, who are induced to buy more commodities than are really requisite, or employers are charged for them at a higher rate than is equitable, the surplus, paid by the consumer, being divided between the gardener and the dealer.

The National Tulip Society (Southern Section) has this year extended its schedule to embrace Tulip flowers of other than the florist's varieties. They are offering prizes for Darwin and garden Tulips shown in vases, also for a group of any variety arranged for effect. The Gold and Silver Medals of the Royal Botanic Society will be awarded for the best trade exhibits. It is hoped that this arrangement will have the effect of bringing together all lovers of the genus Tulipa, and that amateurs and the trade also may combine for its success.

"La Tribune Horticole."—Under this title a new horticultural publication is to be issued weekly under the management of the energetic M. Louis Gentil. The project has the support of most of the principal horticulturists and botanists of Belgium, and will be the official organ of the two horticultural societies of Brussels, the Société Royale Linnéenne and the Société Royale de Flore. It will be illustrated and the text will be of a high-class, wholly independent of trade interests. The first number will be published at the end of June. We shall await the coming of the new venture with sympathetic interest.

FORCING BY ETHER.—Professor JOHANNSEN, of Copenhagen, tells us that the success of his book on forcing by means of ether has surpassed all his expectations, thanks in great measure due to the attention paid to the matter by French and other practical cultivators. Mr. A. MAUMENE has done much in putting his theories into practice, and has brought out a French edition enriched by many notes. Professor JOHANNSEN'S "little discovery" has been made more widely known also by various botanists, and he acknowledges with thanks the literary support of Messrs. BEHRENS, DETMER, ERIKSSON, ERRERA, GOEBEL, MASTERS, DE VRIES, and others. The first edition being now out of print, and a new one demanded, Professor JOHANNSEN could but reprint the first edition exactly. Any developments that have been recently made in the matter and the experiences of practical gardeners have been embodied in an appendix, which contains also further theoretical observations on "rest-periods," and the regulating and manipulation of the apparatus. The detailed scientific discoveries of Professor JOHANNSEN have not yet been fully published, but only a part of them in the Danish language. A list of the literature relating to the subject is included in the appendix. Extensive experiments on the matter of heredity, which were begun at the same time as the researches on the "rest periods," have lately claimed nearly all Professor JOHANNSEN'S available time. This work cannot be interrupted, but Professor JOHANNSEN hopes to proceed with his literary duties when his term at the University of Copenhagen shall have expired. He apologises for not having replied to all the letters and questions relating to the ether experiments that he has received from his own and from foreign countries.

CASSELL'S DICTIONARY OF GARDENING.—It is a bold thing to publish a new dictionary of practical gardening, but Mr. WALTER WRIGHT has shown that he is equal to the task. His encyclopedia, of which a new issue is now appearing, "caters neither for the scientist nor the dilettante, but merely for the cultivator." He omits, nevertheless, many items which are of concern to many cultivators. In the matter of nomenclature, he very prudently takes the *Index Kewensis* as his standard. Wisely, as we think, he retains names established by customary use in gardens and does not enter upon the intricacies of botanical nomenclature, which is of necessity subject to frequent modification as knowledge increases. But it is not necessary to hurl an "array of ponderous tomes" at any one who has the misfortune to prefer a different system from that which the author adopts. For instance, we hope we shall not expose ourselves to a shower of such missiles if we point out that the species of Abies are not now called Spruce Firs. The work is beautifully "got up," copiously illustrated, and well suited for the requirements of the average amateur.

THE GARDEN MAGAZINE is one of the newer American horticultural papers, and is well got up and profusely illustrated. Its contents are very varied and well edited. In the April number is a well illustrated article on flowering shrubs by LEONARD BARRON, the son of "BARRON of Chiswick." Another article is contributed on cooking Potatos by Mrs. BARRON. We do not know how it may be in the States, but certainly in London restaurants, even those of repute, we seldom find a well-cooked Potato, or for the matter of that any vegetable.

EREMURUS AUCHERIANUS.—Madame FEDTSCHENKO, of the St. Petersburg Botanic Garden, has made a critical study of the genus Eremurus, and shows among other things that there is really no such plant as E. Aucherianus, what it so named consisting of the leaves of E. spectabilis accidentally mixed with the inflorescence of E. persicus.

SOLANUM COMMERSONI.—In *La Revue* for April, M. GASTON BONNIER, of the Academy of Sciences, has an article in which he summarises the history of the Potato and its introduction into Europe. He goes on to note the fact that M. LABERGERIE has, as previously noted in these columns, discovered a variety suitable for culture in damp places where ordinary potatos do not thrive. This is the Solanum Commersoni, of which so much has lately been written. This was introduced to the Botanical Garden, Marseilles, whence M. LABERGERIE obtained his tubers. One of the plants cultivated by M. LABERGERIE, it is said, underwent sudden "mutation," and produced two large violet coloured tubers, which were consumed by the grower. Six small tubers from the same plant, however, remained. These were cultivated in the course of two seasons, 1903 and 1904, lost all trace of bitterness, and became, as M. BONNIER himself testifies, good Potatos. Assuming the correctness of these statements—and M. BONNIER is a witness on whose testimony full reliance may be placed—the origin of the Potato, previously a matter of doubt, is rendered clear. The new variety, if we may call it new, is very productive, grows in damp places, and resists the attacks of the Potato fungus (Phytophthora). Among the many variations observed, is one which has given rise to much comment, and which is so like Giant Blue that it has been considered identical. M. BONNIER, however, tells us that, in his experimental garden on dry soil at Fontainebleau, the two varieties—that of M. LABERGERIE and Blue Giant—are quite distinct. In 1905 M. LABERGERIE observed among his experiment plots specimens exhibiting a return to the primitive type of Commersoni, whilst Blue Giant remained constant or nearly so. In considering the evidence brought forward, it must be remembered that (if we read the facts correctly) the two original tubers which were so like Blue Giant were consumed and not re-planted. There is no reason whatever to doubt the good faith of anyone concerned, but the origin of these two big tubers is not so absolutely proven as to exclude the possibility of error. That subsequent tubers were the direct descendants from Solanum Commersoni seems beyond dispute, and this being so, M. LABERGERIE may in any case claim to have made a scientific discovery of great importance and to have achieved cultural results of high value.

"ON PUDDLETON QUAY."—On the evening of May 3 the "Hurst & Son" Musical Society gave a performance in the Cripplegate Institute, E.C., of a musical play entitled "On Puddleton Quay," which has been written and composed by Mr. EDWARD SHERWOOD. The proceeds were in aid of the Gardeners' Royal Benevolent Institution and the Corn Exchange Benevolent Institution. We were pleased to see a good company present to support these charities, and are sure that any of our readers who may have been there would be surprised to learn that in horticultural circles we possess such a distinguished musician as Mr. EDWARD SHERWOOD, who bears a name which has always been closely connected with the horticultural charities. The "Hurst & Son" Musical Society deserve praise for their excellent representation of this pretty play.

AMERICAN TREE CARNATIONS.—Some correspondents draw our attention to the fact that an advertiser giving his address at Loudonville, Albany County, New York, offered for sale Tree Carnations at 25s. per 100. Orders were sent and the money forwarded, but up to the present time no Carnations have been received. We accept no responsibility for what appears in our advertising columns, though great care is exercised in excluding advertisements that the publisher has reason to think objectionable. In the present case, unless some satisfactory explanation be forthcoming, no advertisement will in future be accepted from this firm.

CALLA ELLIOTTIANA.—Double-spathed forms of the common Richardia africana are very frequently met with, and similar deviations from the rule may, of course, be expected in any Aroid. Lately one of our correspondents kindly sent us a specimen of this plant in which the scape or flower stalk, usually leafless, in addition to the ordinary brilliant yellow spathe, bore at the top a large leaf of the usual form much larger than the spathe, green at the base and sprinkled with white spots, while the whole of the upper part of the leaf was golden yellow like the spathe. In a second specimen, the scape or flower-stalk bore a large leaf, half green above, brilliant yellow in its lower portion, which partly encircled the true spathe. This latter was irregularly lobed and deeply divided, part green, part yellow. Common as these deviations are, nobody seems to care to perpetuate and improve them, which is the more remarkable as, with a little patience, a very handsome form could be perpetuated.

MIDLAND REAFFORESTING ASSOCIATION.—The report of this association, which has now completed its third year, states that there are in the district 30,000 acres of useless land which could be planted and made pleasant to look upon. The area, however, at present available for the operations of the association is about 14,000 acres. Altogether the association has planted 43 acres, and 70,630 trees have been used. About 37 acres have been laid out since last April. The association now numbers 250 subscribers, an increase of 100 on last year. Lord LICHFIELD has agreed to let or lease at a nominal rent two acres of pit bank at Deepmore to be planted next season. A large number of willow cuttings have been offered for next season's work. In September last a circular was issued asking for these cuttings, and among the first to respond was the KING, who ordered 20,000 to be forwarded from Windsor. Altogether there are in stock for next season 23,918 trees and 35,500 cuttings.

"THE TATUR DISEES," AND OTHER ESSAYS.—The late Dean HOLE was wont to lament the dulness of horticultural periodicals, and did much to enliven them by the introduction of what are known as "chestnuts." The present volume, ostensibly written by WILLYUM GUBBINS, but actually by Mr. CHAS. T. DRUERY, includes some humorous and other articles, some of which have already appeared in *Amateur Gardening*, and others in the *Gardeners' Magazine*. Couched in phonetic spelling and whimsical sentences are many useful hints, and in this guise these may be more deeply impressed upon some readers than they would be if thrown into ordinary English. The subjects dealt with are various, and include not merely "Tatur Disees," but opinions upon cats as gardeners, the Temple Show, A.D. 2,000, A Wisly Dream, &c. Through all is an amusing running commentary on modern gardeners and gardening. Mr. DRUERY'S many friends appreciate his humour, enjoy his facetious utterances, and recognise the fact that many a true word is spoken in jest.

SOCIETE ROYALE D'AGRICULTURE ET DE BOTANIQUE DE GAND.—We learn from the pages of the *Revue de l'Horticulture Belge*, that M. ALEXIS CALLIER has been appointed President of the above society, in succession to the deeply-lamented Count OSWALD DE KERCHOVE. M. CALLIER is well-known as a Chrysanthemum lover. Count ANDRE DE KERCHOVE has been elected a member of the society.

PARASITIC GROWTHS.—We are asked to state that Professor FARMER, F.R.S., is very anxious to obtain specimens of Parasitic growths, as this is a subject in which he is specially interested. They should be forwarded to Claremont House, Wimbledon Common, Surrey.

A Horticultural Exhibition is to be held in connection with the Royal Counties Agricultural Society's Show, at North End, Portsmouth, on June 12, 13, 14 and 15. Mr. C. S. Fuidge, Secretary of the Southampton Royal Horticultural Society, is the Superintendent of the Flower Show, to whom all enquiries should be addressed, at 6, College Terrace, Southampton.

Publications Received.—*The Garden City*, April. A record of continuous progress.—*The Institute of Commercial Research in the Tropics*, Liverpool University. Quarterly journal, April, contains reports by Dr. Eric Drabble and other writers upon plants and insects forwarded for identification, and upon the structure of Ramie plants, management of Rubber plants, &c.—*Proceedings of the Agri-Horticultural Society of Madras*, October to December, 1905. Contents: The Rhea fibre industry, Agave fibres, and Araucaria excelsa, the latter, a note, mentioning the death of a fine plant 39 feet high and of proportionate girth and about 60 years old. Considering the adverse conditions of the climate and soil, it had hitherto done well.—From Ottawa. Evidence before the Select Standing Committee on Agriculture and Colonisation, 1905. *Fertilizers, Ensilage, Feeds*, by Mr. Frank T. Shutt. *Fruit Culture and Potato Growing*. Evidence of Mr. W. T. Macoun. *Division of Insects and Plants*. Evidence of Dr. James Fletcher.—University of California Publications. College of Agriculture, Agricultural Experimental Station: *Tomato Diseases in California*, by Ralph E. Smith.—University of Illinois. Agricultural Experiment Station. Bulletin, No. 105. *The Farmers' Vegetable Garden*, by John W. Lloyd, and Bulletin, No. 106. *Spraying Apples*: Relative Merits of Liquid and Dust Applications, by Charles S. Crandall.—*Proceedings of the Western New York Horticultural Society*. Reports the 51st annual meeting of the Society, and mentions the practical value of this book to any interested in fruit or in its cultivation. Certainly it contains some useful and illustrated articles that should prove acceptable to fruit-growers. —*Report of the Horticultural Department, Truro, Nova Scotia.* F. C. Sears, director. The principal work undertaken was in connection with orchard and fruit trials, and the results obtained were very satisfactory.—Ontario Department of Agriculture, Agricultural College. Bulletin 148, *Co-operative Experiments with Nodule-forming Bacteria*, by F. C. Harrison and B. Barlow.—Report of the Farmers' Institutes of the Province of Ontario, 1905. Part I. *Farmers' Institutes.*—U.S. Department of Agriculture. Farmers' Bulletins. No. 243, *Fungicides and their use in preventing diseases of Fruits*, by M. B. Waite. —No. 248, *The Lawn*, by L. C. Corbett.—No. 250, *Prevention of Stinking Smut* of *Wheat and Loose Smut of Oats*, Walter T. Swingle.—No. 253, *Germination of Seed Corn*, J. W. T. Duvel.

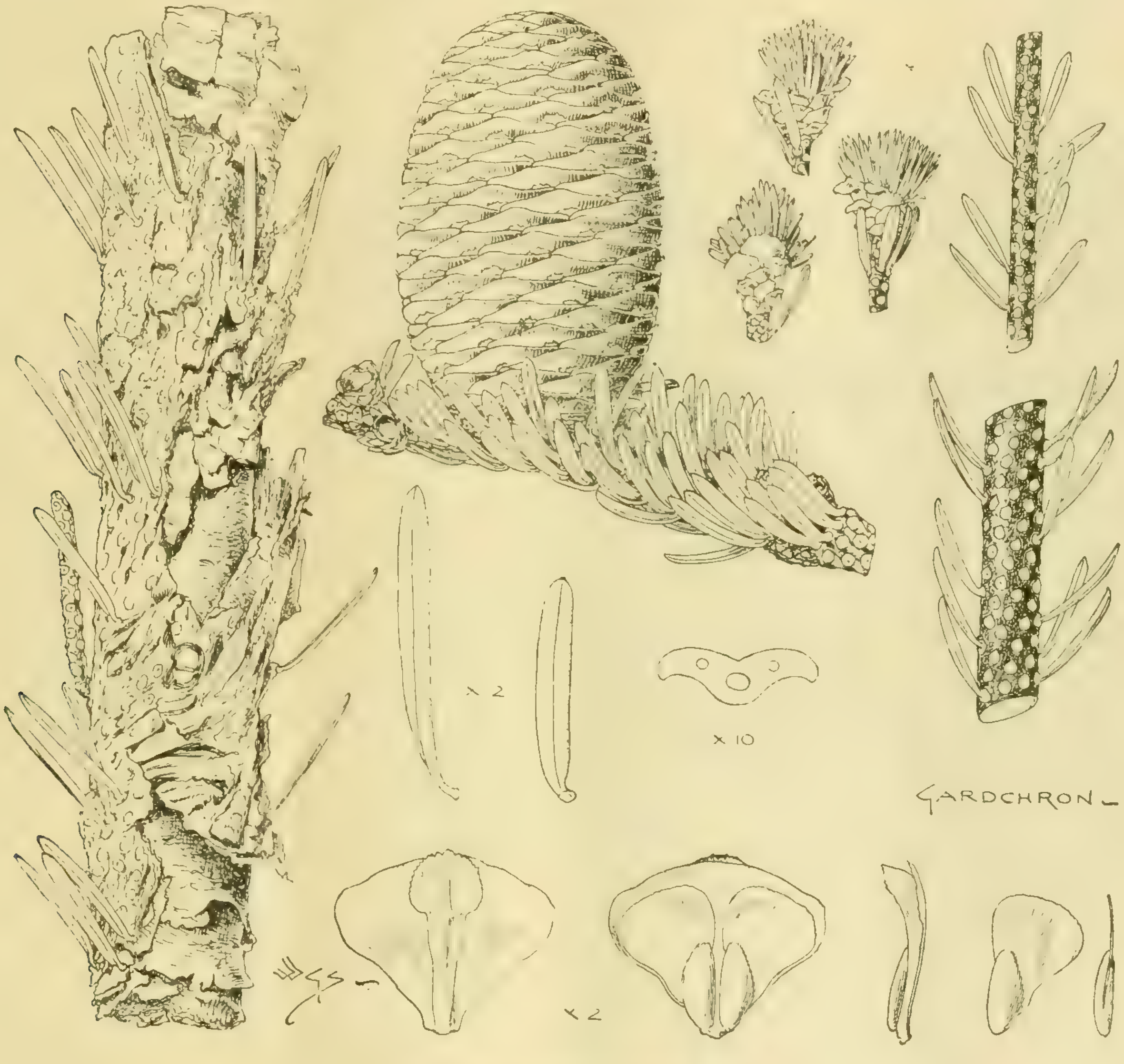

Fig. 121. Abies squamata, Mast. sp. nov.

Showing branch with detached scaly bark of a rich orange colour; foliage and violet-coloured cone, buds, shoots, leaves magnified 2 diams.; leaf-section magnified 10 diams. Cone-scales with bract and seeds.

CHINESE CONIFERS.

ABIES SQUAMATA, Masters sp. n.*

This is one of the most remarkable of the many new Conifers discovered by Mr. E. H. Wilson in Western China. The tree is mentioned in Mr. Wilson's article in the present number, p. 293, and is specially noteworthy for its bark, which scales off in thin bright orange-coloured scales. The resin canals are in the substance of the leaf. The young leaves are thrust through the scales, which form a sort of sheath at the base of the bud [tubular deperulation, see *Journ. Linn. Soc.*, Vol. xxvii., p. 273]. The cones are of a violet colour.

Mr. Wilson, *in litt*, says that it occurs in the wild country to the west of Tatien-lu (long. 102° and 103°, lat. 30). It forms entire forests between 12,000 and 14,000 feet, having the highest altitudinal range of any Silver Fir, or indeed of any Coniferous tree, in the district.

The timber is of good quality, and valued by the Tibetans for building purposes. The local name is To-ma: our illustration, fig. 121, was drawn by Mr. Worthington Smith from dried specimens. The acuminate points to the bract are scarcely shown in the drawing; indeed, they are so fragile that they speedily break off so as to be no longer conspicuous.

NURSERY NOTES.

BAKER'S, CODSALL.

A recent call made at Messrs. Baker's nursery, at Codsall, showed that considerable development has been made in this new establishment since our previous visit in August, 1904. The firm possesses 90 acres of good meadow-land in this village, and in 1904 there were 45 acres under nursery stock. In the meantime nine additional acres have been brought into similar cultivation, making the total to 54 acres, and still leaving facilities for increasing the area.

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* Abies squamata, *Masters* sp. nov. Arbor insignis 50-120 ped. *Rami* vetuli cortice tenui, in laminas papyraceas rubro-aurantiacas decorticantes, Ramuli novelli nigro-hirsuti, cicatrices orbiculares pallidæ. *Folia* dense spiraliter disposita 16-20 mill. long., 2 mill. lat. linearia curvata acuta vel obtusa superne sulcata subtus medio carinata. Canales resiniferæ medianæ. *Amenta* stamenigera ad 25 mill. long. cylindrata, antheræ oblongæ obtusæ. *Strobili* ad 5-6 cent. long oblongo-ovoidei, violacei. *Bracteæ* parum eminentes spatulatæ, superne serrulatæ acuminatæ, acumine recurvato cito deciduo. *Squamæ* bracteis parum longiores transverse oblongæ convexiusculæ basi cuneatim angustatæ. Semina alata ala pallide fusca oblongo obovata.

China occident. in silvis prope Tatien-lu. (Wilson, 3019!)

On entering the nursery by the main gates our attention was attracted by the circular rock-garden on the side of the nursery bounded by the road, and therefore open to the public inspection. It has been formed on the site of a pool which has been drained of water for the purpose. Near by this new rockery is the ground which is utilised for the cultivation of Dahlias, Gladioli and other bright flowering plants, therefore the view from the roadway in the summer and autumn months is one of rich floral colour. The propagation of Dahlias for sale and for planting out in the nursery was being brought to a conclusion, there being many young plants at that time large enough for distribution. Dahlias are treated quite as a speciality by Messrs. Baker, and they propagate something like 50,000 plants each season. Those plants that are cultivated in the nursery for supplying Dahlia flowers for exhibition, and for increasing the stock of tubers, are planted at 5 feet apart and treated to the most liberal culture.

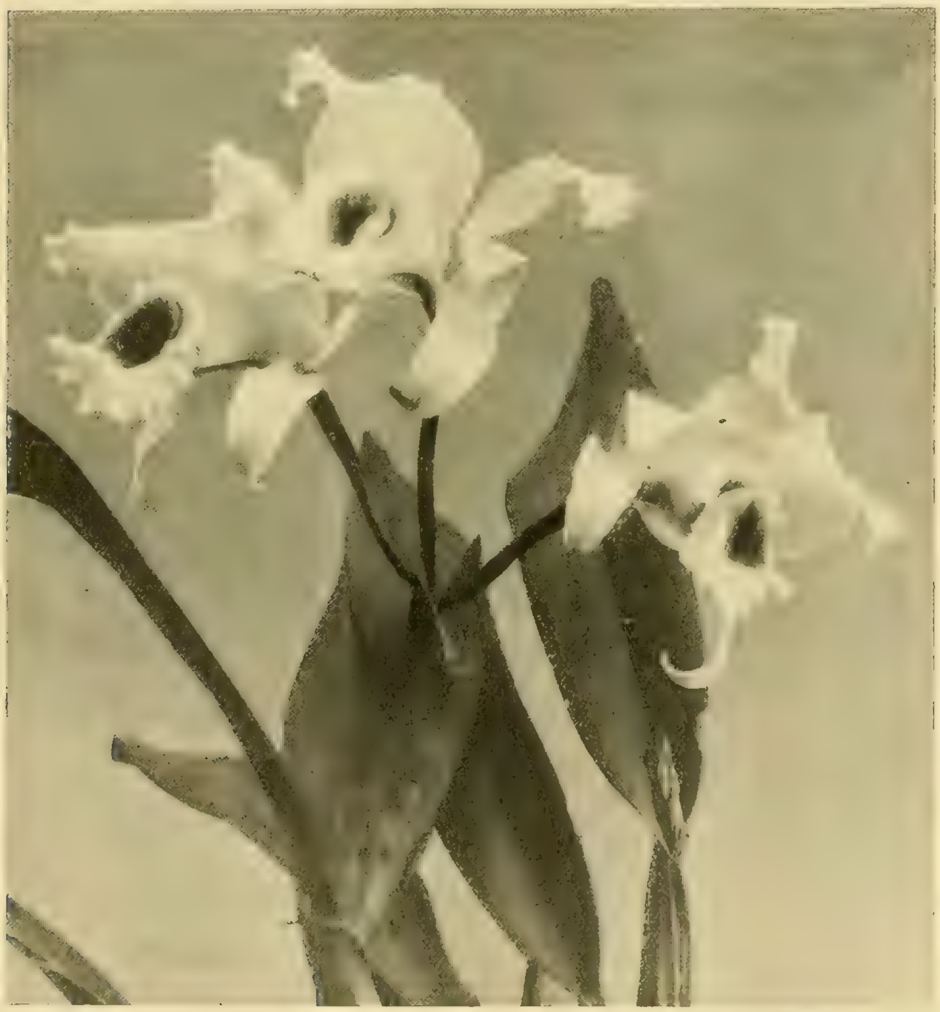

Fig. 122. Cattleya Schroeder alba.

Sweet Peas are cultivated with the same care as Dahlias. An unusually large collection is grown, the plants being raised in pots and transplanted thinly, as is done under the very best cultivation. Efforts are being made to raise new and superior varieties of Dahlias, Sweet Peas and other plants. A Sweet Pea sport, from the variety Countess Spencer, that occurred in the nursery was named Marie Baker; but the same sport having also arisen in Mr. Bolton's garden at Carnforth, where it had been named Tom Bolton, the sport has since been named Mrs. Charles Foster, under which name a certificate was awarded it at the last Wolverhampton show.

Carnations are grown in large numbers, especially the border varieties, but it is intended to make a collection of winter flowering plants also. Roses occupy a large share of the nurseries, and the stock includes a very representative collection of varieties. Of fruit trees the firm has already a stock of 7,000 saleable trees that have been worked on the place since its establishment. During the past season 10,000 more fruit tree stocks have been budded or grafted.

The stock of hardy flowering plants, including Violas, Pansies, Auriculas, &c., and an excellent strain of Polyanthus, appeared to be very large. Kniphofias are grown well, and all the varieties in the collection are recommended as having proved to be perfectly hardy in the district. Early flowering Chrysanthemums for border cultivation constitute a very exhaustive collection. Messrs. Baker's business premises are in Lichfield Street, Wolverhampton, and they have been fitted up in an elaborate and efficient manner. For supplying these shops with saleable produce a large number of glass-houses at the nursery are devoted in which Tomatos, Ferns, Pelargoniums, and other plants are cultivated in the manner they are in an up-to-date market establishment. Mr. T. G. Baker has two sons in the business, one at the seed shop and another at the nursery, and Mr. Kerr is the general manager at the nursery.

CATTLEYA SCHROEDER ALBA.

Our illustration (fig. 122) is taken from a photograph of a plant of Cattleya Schroeder alba, flowered by Mr. Pelken, Tenuta de Boscobello, Florence, and of which flowers were also sent, the blooms being pure white with orange disc to the lip. On first opening, the flowers of a good number of ordinary Cattleya Schroeder appear to be white, but afterwards assume a pale lilac tint. The flowers sent were mature, and consequently they were of true C. Schroeder alba.

NEW INVENTIONS.

THE LITTLE GRIPPER.

The implement shown in fig. 123 is not intended for the everyday gardener, but may be a useful tool for the amateur and suburban gardener in removing weeds and litter from the flower border or the lawn, or for gathering flowers and fruits without treading upon the beds. It is also recommended for pruning, but the cut it makes is too much in the nature of a bruise to be used for that purpose. It can be adapted as a walking stick, and to pick up litters. The knob, by the lever, adjusts the opening of the jaws. The maker is Mr. A. C. Harris, 42, Howard Road, Leicester.

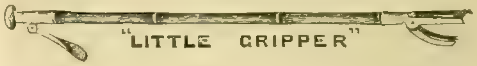

Fig. 123.

FOREIGN CORRESPONDENCE.

KOCHIA TRICHOPHYLLA.

Our attention has been called to the note "Another Ornamental Kochia" in your valued journal of March 3, which we overlooked on account of pressure of business.

One of the same plants as those grown under the name of "Kochia sooparia," at Swanley, Hampton Court, Victoria Park, &c., was sent to us by Mr. W. Atlee Burpee, of Philadelphia, in the autumn of 1903, and knowing this to be very different from the old well-known plant "Kochia sooparia," we transmitted the specimen received from Mr. Burpee to the Director of the Royal Botanic Gardens, Kew, asking him to give us the correct name.

On Nov. 13, 1903, we received the following answer: "The Director of the Royal Botanic Gardens, presents his compliments to Messrs. Haage & Schmidt, and begs to inform them that the plant received for identification is 'Kochia trichophila,' Stapf n. sp. Royal Botanic Gardens, Kew, Nov. 11, 1903." *Haage & Schmidt.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Packing Seeds for the Tropics.—The following extracts are from a letter from Mr. D. Tannock, Superintendent of Parks and Gardens in Dunedin, New Zealand. It goes to show that seeds packed in canvas or paper bags in the ordinary way may be sent a long way overseas through the tropics without appreciable harm. Of course, the preservation of seeds of temperate plants in a moist tropical country is a question outside the enquiry as to the best method of packing seeds for despatch to such countries. I take it that all such seeds should be sown as soon as possible after arrival in the tropics. "Dear Mr. Watson:—With reference to sending seeds in paper bags I can state that your seeds come up well, even though they have to be kept some time before sowing. The annuals sent last year germinated splendidly after being kept four months. Our seeds are ripening now, and I will forward those you desired and others as soon as ready." *W. Watson.*

Cestrum Smithii.—I note Mr. Ward's remarks (see p. 276), and am wondering whether anyone in the warmer counties has succeeded in flowering this plant out of doors. Some three years since I set out a plant against a warm wall in a very sheltered corner, and having a south-east aspect, where Solanum crispum, Rhyncospermum jasminoides, Louicera sempervirens, and Aloysia citriodora grow and flower freely, but up to the present the Cestrum has shown no flower, though it has withstood 14° of frost without suffering the least injury to the well-ripened wood. Should this note catch the eye of Mr. Fitzherbert no doubt he will tell us whether he has ever found this plant flowering in the open, in this or the adjoining county of Cornwall, *J. Mayne, Bicton.*

Bulbous Irises.—I venture to ask for information as to whether the under-mentioned suggestion for growing such difficult Irises as Iris reticulata and the rest of this section appears to those interested in their culture to be in the right direction. That I. reticulata can be grown and successfully established in England appears to be an undoubted fact, as there is one garden, I believe, where it grows so luxuriantly that clumps are from time to time lifted and sold. If this is the case, even in one locality, we have to face a very different problem from that presented in the case of the Oncocyclus Irises, which refuse to grow well anywhere in England. My theory is, therefore, that the question is one of soil composition, which Dr. Voelcker, the eminent agricultural chemist, is ready to try and elucidate. Given a proper situation, &c., and as perfect a ripening during summer as is possible, which is after all only a question of degree (no attempt being made to lift the bulbs), I believe that if the right chemical soil and position could be discovered that most of the difficulties in growing these Irises would vanish. Any confirmation of my theory would be gratefully accepted. *Basil Levett, Wychnor Park, Burton-on-Trent.*

Injury to Strawberry Fruits.—We have had Strawberries injured by the ordinary house mouse in a similar manner to that described on p. 283. The mouse appears to prefer the seeds where they approach the stage of maturity to the pulp of the receptacle. I have also known the squirrel to take the kernel-stone of the Peach and reject its flesh. *T. Coomber, Hendre Gardens, Monmouth.*

—— I have no hesitation in stating that mice are responsible for the injury done to *F. W.'s* Strawberries (see p. 283). I could also have sent you the produce of one plant, the fruit of which has been damaged by having the seed or "pips" picked out by the mice. No doubt more would have met with a similar fate were it not that cats have the run of the fruit-houses here. *F. W.* may find some of the seeds or traces of them on the stage or shelf on which the pots are standing. *W. P. R., Preston.*

——I think there can be no doubt but mice are responsible for the disfigurement of the ripe fruits In our case they tackled the swelling fruits early in February before they began to colour, nibbling off the "pips" in a wholesale manner, but, as you say, not eating the fruit itself. Only this week they have served quite one hundred ripe and ripening fruits in a similar manner, compelling us to remove all the plants to a suspended shelf in the early Peach house. I advise *F. W.* to do the same, as the mice, if not caught, will continue to molest them as long as there is any fruit about. Ours were stood on a shelf at the front of the early vinery, and although the Grapes are ripe I can find no evidence of mice attacking the berries. Where mice abound in the open garden I have frequently remarked that Strawberry fruits have been denuded of the "pips." *J. Mayne, Bicton.* [Other correspondents have written us to the same effect.—Ed.]

Senecio Petasites.—In alluding to this plant a few weeks ago the writer of the note stated that it was not often met with in gardens. Under glass it is doubtless not a popular plant, but in the south-west where this native of Mexico will flourish in the open air it is not uncommon. In Mr. Howard Fox's garden at Rosehill, Falmouth, there is a fifty-year-old plant which is 12 feet in height and as much through. This practically flowers through the entire winter and early spring. Flower-sprays were exhibited at the Cornwall Daffodil Society's show at Truro on April 3. A still handsomer Senecio is S. grandifolius, which is also grown in Cornwall. This produces enormous heads of tightly-packed yellow flowers, sometimes 18 inches or more across. This was at its best in March, its blossoms being faded at the date of show. *S. W. Fitzherbert.*

Early Sweet Peas.—Enclosed I send a few Sweet Peas, which I thought may interest you, as they are somewhat early for this part of the country. They were sown in boxes about 3 feet long and 6 inches deep in September last, and the seed boxes were left outside until the weather became cold. I then placed them on the floor of a cool Peach house, and early in January transferred them to larger boxes and allowed them to remain in the Peach house until they flowered. I cut the first blooms on April 14, and have had a good supply since. *John B. Crichton, Old Court Gardens, Strangford, Co. Down.*

Early Flowers.—I have this day gathered a fine flower of Rosa sinica anemoneflora from the open on a south wall. This is a very beautiful Rose, especially for decorative purposes, though it has also a handsome appearance on the wall, with its deep green shining foliage and pretty pink coloured flowers. The flowers of Solanum crispum were obtained from a plant 10 feet in height and it presents one mass of flowers. Ceanothus Veitchianus is just opening its flowers and will soon be delightful. This is the best of all varieties, and blooms very early. Leptospermum flavescens is another pretty shrub that is just opening its flowers. This plant bears a profusion of bluish-white flowers, which are the more conspicuous as having bright yellow stamens; I believe this is the only species, though it is nearly allied to the Saxifragas. I will send a flower in the course of a few days. *W. A. Cook, Leonardslee Gardens, Horsham.*

Chicory and Hares.—The enclosed specimens are, I think, those of the common Chicory—Cichorium Intybus. The flower-heads are blue, and are borne on stems 18 inches to 2 feet high, with long and tapering roots. The plant has been recommended as good food for hares, and is said to attract them more than any other common herbage in pastures where they abound. This plant is only found here over a limited area, and possibly may have been sown with the Grass seeds. It is a curious fact that more hares are found on the pastures where the enclosed plant is growing. Have any of your readers any experience of growing this plant to attract hares? *Thomas Bennett, The Gardens, Knockbrex, Kirkcudbright, N.B.* [We believe the specimens sent were Chicory, but have no knowledge of the plant's connection with hares. Ed.]

Calceolaria Mexicana.—I have grown this pretty annual Calceolaria for several years. After once being introduced into the garden it never needs renewal, as seedlings spring up everywhere, generally showing themselves early in April. I see that Mr. F. G. Brewer, on p. 267, speaks of it as growing to a height of 4 to 5 feet, and I cannot but think that he alludes to a different species to mine, which never exceed 18 inches in height and is usually dwarfer. The plants are alike in colour of flowers, which are pale yellow. Mr. Brewer states that he has flower-sprays that have been cut 16 days. In my case the first flowers are only now on the point of colouring, and this spot is, I imagine, considerably warmer than Merioneth. It is not alluded to in *Nicholson's Dictionary of Gardening*, where the only two annuals mentioned are C. chelidonioides and C. pinnata, both of which are natives of Peru. *S. W. Fitzherbert, South Devonshire.*

Saxifraga Boydii.—Mr. Jenkins' interesting paper on the Yellow Saxifrages in the *Gardeners' Chronicle* for April 21, having been brought to my notice, I should like to reply to one or two of his queries in regard to Saxifraga Boydii. This plant originated in my brother's garden at Cherrytrees, Roxburghshire, sometime about 1880. It was not an artificially crossed plant between S. aretioides and S. Burseriana, as Mr. Jenkins supposes, but the seedling was found growing near a plant of S. Burseriana, and as a plant of S. aretioides, the only yellow Saxifraga in the garden at that time, was growing not far off, the assumption was that it was a natural hybrid between those two species. I cannot say whether there was more than one plant originally found or not, but, at any rate, for many years after its discovery the stock was very small, and the plants were all exactly alike in every particular. S. Boydii, like many other hybrids, is a very shy seeder; but after one warm spring and summer my brother found a pod of ripe seed on one plant, which was growing in a cold frame. From this seed he raised a few dozens of healthy plants which, when they came to flower, showed considerable variety both in colour and in shape. Many of them were like the parent plant, but several were separated out from the rest which we thought better than the original; two of those were put in circulation more than a year ago, under the names of S. "Faldonside" and "S. Cherrytrees." The first of these is, I think, a better grower than its parent, and has a much finer flower. Although the colour is slightly paler the flower is perfectly circular, which S. Boydii is not, and shows none of the open spaces between the petals when the flower is fully expanded, and the flower is also larger than that of its parent. The latter of the two, "S. Cherrytrees," is also a circular flower, but of a very pale yellow colour, and is very beautiful when fully expanded. I have, however, not found this plant quite such a free grower as the other one. There were among the seedlings several with white flowers, but as none of these was any better than S. Burseriana itself, although having a bunch of flowers on the flower-stem, I have only kept one, which flowers a good deal later than any of the others. Mr. Jenkins mentions that he has seen two sorts under the name of S. Boydii. I think that as many of the seedlings were considered so like S. Boydii they got mixed with the original plants, and I have no doubt they have been sent to some people as the original plant. I cannot tell where the pollen came from, but the assumption is that it came from the plant of S. aretioides growing near. As the original seedling was found growing close to S. Burseriana I assume it must have been the seed-bearing plant, and as the male or pollen bearing plant usually carries the colour, I fancy S. aretioides was the pollen plant in this instance. These two yellow-flowered seedlings from S. Boydii which I have mentioned are in the hands of Messrs. Cunningham & Fraser, Comely Bank Nursery, Edinburgh, for distribution. I may mention that I have at present a small plant of the true S. luteo-viridis with five spikes of flower, each spike carrying from six to ten flower-buds. They are not yet fully expanded (on April 27), but this plant has been outside all the winter on the rockery. I find all this class of Saxifrages grow much better if the soil is mixed largely with grit. *William B. Boyd, Faldonside, Melrose, N.B.*

North Middlesex International Gardeners' Society.—A new gardeners' society has been formed at Enfield Highway. Enfield is well known for its nurseries, those in and round Enfield together employing several thousand men, of whom a good many come from the Continent each year. Up to the present time they have had no organisation whatever. The new society is called the North Middlesex International Gardeners' Society, and its objects are: to educate its members through horticultural lectures, botanical excursions, and perusal of English and foreign horticultural publications, and also to afford its members the advantages of social intercourse, and to bring about a better understanding between the English and foreign gardeners in Enfield. The society consists of active, passive, and corresponding members. Any gardener or nursery-hand can join the society. The universal language will be English, although any member who is not able to speak sufficient English can write a paper in his own language, which will be translated into English by the secretary. The society will always be thankful for any assistance from professional men in the form of lectures or instructive correspondence, and desires also to get into touch with other gardeners' societies, especially the British Gardeners' Association. Communications should be addressed to the secretary, Mr. C. Hasselgren, 49, St. James's Road, Enfield Highway, Enfield, Middlesex.

Hardiness of Hippeastrums.—Last autumn it was noticed that several of the plants in our collection were infested with mealy bug. Mr. Martin, my employer, wished the plants to be planted out in the open ground to see if it would clear out the bug. This was done, the plants being planted about 6 inches deep, and covered first with sand to the depth of about 2 inches, and afterwards covered with soil. They were left there until the 4th of the present month (May) when I took them up, and found that all the bulbs except two or three were sound and growing. They are now potted up, and as far as I can see are clean, as no bug could be seen at the time. I do not think amateurs need despair of growing these beautiful flowers in their greenhouses if there are means for excluding severe frost. Later I may let you know the result this treatment has on the bug, also on the flowering of the bulbs, for they have been in very moist conditions during the winter months, when they are usually resting. *S. Boulden, The Gardens, Treverbyn, Plympton, South Devon.*

Wire Hoops for Strawberries. — In answer to the Rev. Geo. Henslow's enquiry respecting the lifting of trusses of Strawberry fruits on wire hoops, I may say that it is highly undesirable to do this when grown in the open ground, as the higher the flowers are raised the smaller will be the fruits. Straw or similar material answers three or more purposes, viz., it checks the growth of weeds, conserves the moisture in the ground, and prevents the fruits from getting gritty during heavy rains or thunderstorms. In these gardens, where 2,000 pot plants are forced annually, every truss of flowers is supported by a small prop cut from Pea-boughs or old Birch-brooms. The prop is cut about 1 inch longer than the length of the flower-stem, from the crown of the plant to the point where the flower-stem branches, and so inserted in the soil as to allow of the fruits to hang over the sides of the pots. Splendid fruits are obtained in this way, but to place the flower-stem in a vertical position or nearly so would greatly diminish the size and quality of the fruits. *J. W. Miles, Fruit Department, Blenheim Gardens, Woodstock.*

Nicandra violacea. The *Revue Horticole* for May 1 gives a coloured plate of the above-named beautiful Solanaceous annual, whose introduction into cultivation, as told by Mr. Henri Lemoine, is both interesting and curious. In 1900, in one of the open air seed-beds of the Botanic Garden, at Tours, appeared a single chance seedling which no one recognised or could give a name to. It was carefully lifted and watched till it produced its large, pale violet bell-shaped flowers, when it was submitted for careful examination and comparison to the botanical authorities at Paris, who pronounced it to be a Nicandra, but quite distinct from, and much handsomer than the only known variety N. physaloides. From the colour of its flowers they gave it the specific name of violacea. It is quite pretty, and seems to be a free blooming plant. *W. E. Gumbleton.*

The Weather in Cornwall.—The rainfall during last month was slight, being only 1·85 inches, bringing the total for the year up to 15·65. Although these figures show a very acceptable quantity there was for the first 22 days practically no rain; bright sunshine with north or north-east winds, sometimes blowing very strongly, made the soil dry. Narcissi and Rhododendrons in sheltered positions have been very fine, but those shrubs which were planted during March have had to be heavily watered, or, where they have not been carefully attended to, show unmistakable signs of an early drought. We registered no frost during April, but there were some showers of hail during the last week. *H. W., Trevince.*

Retirement of Mr. Bailey Wadds.—I have to ask your permission to refer to the retirement of Mr. Bailey Wadds from the position of gardener at Birdsall Gardens, York. Mr. Wadds may justly be called a born gardener, seeing it was in a gardener's cottage he first saw the light. His father was gardener for many years at Queenby Hall, in Leicestershire. His first place from home was at Keythorpe, the home of Lord Berners, where he stayed seven years. He then went to Caen Wood, Highgate, under the then well-known gardener, Mr. Cockburn, from thence to Cliveden, under Mr. Fleming. At that time Cliveden was in the heyday of its fame for spring flower gardening, and a great gathering place for the nobility and others. Mr. Wadds has told the writer of his frequently seeing the Duke of Argyll, the Earl of Carlisle, Sir Charles Wood, Mr. Gladstone, and Garibaldi in his red shirt. His first charge as head gardener was at Raywell Hall, in East Yorks, where he remained seven years. He then went in the same position to Sir John Thorold, Syston Park, Grantham, for another septennial period. In 1873 the late Lord and Lady Middleton, of Birdsall House, York, decided to make extensive alterations in their gardens, and Mr. Wadds was chosen to carry out the work. A new kitchen garden was made and very fine ranges of glass houses were built by Messrs. Foster & Pearson, of Beeston, Notts. The latter are arranged on the then seldom seen corridor system, and may be said to have answered admirably. It may be remarked in passing that where a fairly large quantity of new houses is to be built on this principle it is best to keep the plant houses and fruit houses in separate blocks. There is much less risk of injury to the latter from troublesome insects when this is done. Figs in pots, Peaches, Grapes in variety, Roses, and Malmaison Carnations may be said to have been the specialities at Birdsall, not overlooking the very important point of a good general supply of all kinds of garden produce. The Apricot shed may be said to have been unique, so constantly have heavy crops of good fruit been produced in it. Some of the choicer dessert Plums have also done very well. Mr. Wadds has won golden opinions from his friends and neighbours during his 33 years' residence amongst them by his general helpfulness all round. His constant endeavour to gain donations and subscriptions to the Gardeners' Royal Benevolent Institution are well known. I believe he has raised considerably over £200 in this way with a view to benefit his fellow gardeners. Those who have done anything in this direction will well know the tact, sound judgment, and continued alertness required in his case. Mr. Wadds' duties cease at the end of June. He thinks of settling near Derby where he has a married daughter. Lord Middleton has very kindly offered him help in his declining years. His only son is gardener to Sir Weetman Pearson, at Paddockhurst. *Yorkshire Gardener.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

May 1.—*Present*: Dr. M. T. Masters, F.R.S.; Dr. A. Henry; Rev. W. Wilks, M.A.; Messrs. G. S. Saunders, H. T. Gussow, W. C. Worsdell, A. Worsley, H. B. May, H. J. Elwes, W. Cuthbertson, E. A. Bowles, E. M. Holmes, A. W. Sutton, G. Massee, G. Nicholson, C. T. Druery, J. Douglas, and F. J. Chittenden (hon. sec.).

Gardenia Roots Dying.—Mr. G. S. Saunders reported that he had carefully examined the roots of Gardenia shown at the last meeting, but could find no trace of eelworm. A fungus of some kind was, however, present, which might account for the death of the roots.

Variation in Ferns.—Mr. H. B. May showed examples of crested forms of two species of Nephrolepis, N. exaltata, and N. rufescens, both of which bore curious tassel-like growths. He remarked that he had not seen anything of the kind in exotic Ferns before; he found that the tassels die after being in existence a short time. Mr. Druery said that although such variation in exotic Ferns was new to him, he had found a similar thing to occur in British Ferns, e.g., in Athyrium, Lastræa montana, and Scolopendrium. He considered that the formation of the tassels was due to the growth of the nerve beyond the region of development of the flattened portion of the frond and its subsequent repeated branching. He thought their early death was to be explained by the fact that they must be functionless.

Variation in Colour of Tendrils of Sweet Peas.—Mr. Cuthbertson drew attention to the fact that some varieties of Sweet Peas had from their earliest growth a reddish tint in their tendrils, while others were quite green, with the object of ascertaining whether any one had discovered the significance of this variation.

Fruit of Lilium candidum.—Dr. Masters showed a ripe capsule of Lilium candidum containing a few apparently well-formed seeds among a large number of imperfectly formed ones. Mr. Wilks said that numbers of capsules were produced at Wisley on this Lily, but he did not know whether they contained any perfect seeed. Mr. Elwes said that plants had been raised from seed produced after artificial fertilisation.

Pinus sylvestris Destroyed by Beetles.—Mr. Saunders took some specimens sent from Suffolk, and will report upon them later.

Convolvulus azureus Leaves injured.—Leaves of a plant of Convolvulus azureus which had been inadvertently left in a Cucumber house were sent by Mr. A. C. Barlett, of Pencarrow Gardens, Cornwall. Many spots were present on the leaves, and from the centre of each a rather large black projection arose. These spots are caused by a checking of transpiration, and the production of warts or "intumescences" as a consequence, and are quite similar to those shown recently on Pelargonium, Hydrangea, and Fuchsia. A proper balance between heat, moisture, and light must be maintained if such unhealthy growth is to be avoided.

Vines Dying Back.—Some Vine shoots, the leaves of which first became brown at the edges, then farther back, were received. Mr. Massee took these for further examination.

Richardia Elliottiana Malformed.—Mr. E. H. Jenkins, F.R.H.S., of Hampton Hill, sent a curious malformation of Richardia Elliottiana. In the place of leaves were long narrow structures resembling petioles, and in one case a much attenuated growth with wavy margins; and while the spadix appeared to be properly developed, the spathe was reduced to a thread-like outgrowth about 3½ inches in length. The corm and roots were normal.

Plants, etc., Exhibited.—1. Cypella Herberti. Mr. Worsley showed an inflorescence of this curious and beautiful South American Irid. 2. Tropæolum Lobbi × T. canariense. He also showed flowers of this cross, and remarked that while in summer the flowers produced were of a bright red, in winter the petals were usually margined with yellow. He found that the flowers borne by plants raised from cuttings of this plant varied considerably, and passed specimens round in illustration of his remarks. 3. He also showed a flower of a Tropæolum having two spurs. The stem bearing it appeared to be fasciated, and the plant from which it came was raised from a cutting taken from a fasciated stem. 4. Deutzia scabra. Dr. Masters drew attention to the true D. scabra shown by Messrs. Paul & Son, Cheshunt, and pointed out that the plant usually grown under that name was really D. crenata, a species with which it has long been confounded. 5. Ceanothus Fendleri. He also commented upon this plant, which, unlike other members of the genus, has a grey bark, is spiny, and bears white flowers. It is a mountain plant and comes from the South-western United States. 6. Fritillarias. Mr. Elwes showed several "species" of Fritillaria, and said that he thought that in all probability many were geographical forms of one species. He thought this to be the case in all probability with F. acmapetala, F. Elwesi, and F. pontica, all of which came from Asia Minor. Other species shown were F. Whittali, F. Kotschyana, F. messunensis, and F. pallidiflora.

Deodars Dying Suddenly.—Mr. Elwes remarked that his attention had recently been called to several Deodars of considerable size which had died quite suddenly. The trouble could not be attributed to uncongenial soil or to climate, and nothing seemed to be known as to the cause. Mr. Worsley said that he had known of similar sudden death in Sequoia, Libocedrus, and Biota.

Change under Cultivation.—Mr. Elwes showed flowers of a Bomarea in order to illustrate the great changes occurring in a species when brought under cultivation. He collected the seeds at Rio Janeiro, and the plants when raised bore quite small flowers, but now the flowers were very much larger, and differed in colour, and the leaves greatly exceeded the originals in size. The plants, however, which had been kept in pots, still bore small leaves and flowers. The species had been determined to B. edulis, but after cultivation it nearly approached B. Carderi in appearance.

ROYAL CALEDONIAN HORTICULTURAL

May 9, 10.—The executive changed the date of this show from the end to the second week of the month, and so far as the quality of the exhibits is concerned the change is for the better, though a smaller number of entries is reported.

The Edinburgh nurserymen as usual did their best to aid the show, the chief firms filling nearly half the floor space of the market with groups of plants. Commencing at the east end, Messrs. J. Stormonth & Son, Kirkbride, staged an extensive group of Alpine plants arranged on a rockery; then Messrs. J. Dickson & Sons, Hanover Street, Edinburgh, came with a small group of flowering plants, next to which Messrs. Cunningham & Fraser, Comely Bank, had a noble mass, mainly of Rhododendrons, also an extensive rockwork furnished with Alpine plants. Messrs. R. B. Laird & Sons, Pinkhill, came in succession with a charmingly arranged group of Acacias, Azalea mollis, Rhododendrons, Spiræas, Heaths, etc., the whole being most effective. Occupying the space half-way up the market Messrs. Dicksons & Co., Waterloo Place, staged a wonderful group of pot Roses, including various Ramblers, Hybrid Teas, etc., with a few grand examples of Rhododendrons, Pink Pearl and White Pearl, and a new Ivy named Edmontonensis, heavily variegated with milk-white. The firm also set up some vases of extra fine Carnation blooms, including the varieties Governor Wolcott, Enchantress and Mrs. J. W. Lawson. Mr. John Downie, Beechwood, continued the series of groups with a nice lot of decorative material, and Mr. David W. Thomson, 113, George Street, set up a delightful arrangement of forced Standard Roses, with Lilacs, Azaleas, and Rhododendrons as a carpeting.

Other trade groups comprised cut Tulips from Messrs. W. B. Hartland & Sons, Cork; a miscellaneous arrangement from Mr. Forbes, of Hawick, in which Carnations, Pæonies, and Calladiums were prominent; Messrs. Dobbie & Co., Rothesay, staged a fine lot of Pansies, Violas and Zonal Pelargoniums; Messrs. Barr & Sons, London, an extensive lot of May Tulips, Spanish Iris and Tritonia crocata; Messrs. W. Cutbush & Sons, Barnet, a collection of cut Carnations, including White Lawson, General Kuroki, Fair Maid, and Mrs. Elliot, and a basket full of Polyantha Rose Mrs. W. H. Cutbush. Mr. L. R. Russel, Richmond, Surrey, a table of dwarf Clematis; Messrs. J. and A. Glass, Princes Street, Edinburgh, a good collection of cut Narcissus, the blooms of which were large and well developed; Messrs. Kent & Brydon, Darlington, Carnations and a nicely-arranged rockery, backed with Palms and Roses; Messrs. Hogg & Robertson, Dublin, a very extensive collection of cut Tulips, the blooms being of large size, and the kinds varied, Miss Jekyll, Rose Mignonne, La Rêve, Pink Beauty, Yellow Queen, Lord Byron, Alexandra and Summer Beauty being specially fine; Messrs. Storrie & Storrie, Dundee, had a large collection of Primulas of showy sorts, including the sweet strain of Yellow Auricula, Polyanthus, and some well-coloured varieties of Primula obconica.

COMPETITIVE CLASSES.

Plants.

For a group of plants arranged on the floor Mr. A. Knight, Brayton, staged a delightful arrangement in which the dominant features were standard Crotons, Schizanthus and Odontoglossum crispum; 2nd, Mr. J. E. Davis, Ballanthie, Stanley, Perthshire, who had a bright but somewhat heavy-looking group. 3rd, Mr. G. Brown, Silverknowe. For four Orchids Mr. McIntyre, The Glen, won the 1st prize, having a very fine variety of Odontoglossum crispum and others; 2nd, Mr. T. Dewar, Craigieburn; 3rd, Mr. Findlay, Gogar. Park. Mr. Dewar had the best single Orchid in an extra fine form of Odontoglossum crispum. Mr. McMillan, Douglas Castle, won the 2nd prize.

For a group of Orchids Mr. D. Mackay, Viewbank, Lasswade, won the 1st prize with a varied collection; 2nd, Mr. Dewar, with fewer but better grown plants.

The best exhibit of four stove and greenhouse plants was grown by Mr. McIntyre, and included a fine plant of Anthurium Scherzerianum; 2nd, Mr. Geo. Wood, Oswald House.

For a group of six plants in bloom Mr. McIntyre again won the 1st prize, and Mr. Wood was 2nd.

For six foliage plants Mr. McMillan won the 1st position with clean, well-grown plants, and Mr. Knight was 2nd. A few nice table plants were staged by Mr. Young, Kinlock Castle, who won the 1st prize.

For four foliage plants Mr. McMillan secured the 1st prize with large, well-grown specimens, Anthurium crystallinum being very fine. Mr. Knight was 2nd, and perhaps his exhibit was equal to the 1st prize group; his Crotons and Anthurium leuconervium being extra fine.

Pot Roses made an excellent show, the plants, though small, being healthy and well-bloomed. For 12 pots Mr. Thom, Carlowrie, was an easy 1st. Mr. H. Calder, Lauriston Castle, 2nd. For 6 plants Mr. Thom was again 1st, and also for 6 H.T. Roses.

The best group of three Crotons came from Mr. Mackay, and Mr. Thorn secured the 1st prize for three Dracænas, having fresh, clean examples.

Of the smaller class of plants Calceolarias were very fine, Mr. James Thomson, Redford House, Colinton, winning the 1st prize for six varieties with dwarf and well-flowered examples; Mr. Henderson, Rosanna, Corstorphine was 2nd.

For 24 Alpine plants Mr. D. Allan, Slobhill, Gorebridge, won the 1st prize, and for six Alpines Mr. Turner, Valleyfield, Pennycuik, held the same position. Mr. Allan had the best Alpine Auriculas as well as the six best show Auriculas, the latter in better condition than that in which they are usually presented at Edinburgh.

Of Spiræas, Deutzias, Primula obconica and Polyanthus there appeared to be fewer staged than usual at this show.

Of Ferns there was a good display, Mr. McMillan, Douglas Castle, winning the 1st prize for three plants, and Mr. Duff, The Christie Institute, Portobello, the 2nd prize. Adiantums were fine, the best three plants being staged by Mr. Hermiston, Hazelbank, Murrayfield; Mr. Pearson, Beechwood, having equally fresh but smaller plants. A very large number of British varieties, both large and dwarf-growing, were staged, but these were in less good condition than the exotic species.

Cut Flowers.

Chief among these were the Roses, some of which were very beautiful. For 12 blooms Mr. Parlane, Rosslea, Bow, was easily 1st with lovely blooms. Ulrich Brunner, Caroline Testout, Marechal Niel, and Mrs. W. J. Grant, being conspicuously good; 2nd, Mr. W. Young, Craighlaw, Kirkcowan. For 24 blooms the same exhibitors obtained the same relative places. Marechal Niel in bunches and other varieties were excellent.

For six bunches of Orchids, Mr. McIntyre had the 1st prize, and for 12 bunches of greenhouse flowers Mr. Young, Kinloch Castle, gained the 1st prize. Souvenir de la Malmaison Carnations, Ixoras, and Tuberoses being his best varieties; Mr. McMillan was 2nd.

Daffodils were not shown numerously, but Mr. Prosser, Saughton House, Corstorphine, won the 1st prize for 12 bunches.

For three vases of Carnations, Mr. Kidd, Carbery Tower Gardens, Musselburgh, was 1st, having fine blooms of good winter flowering varieties. Mr. Young was 2nd in this class, but obtained the 1st prize for three vases of Souvenir de la Malmaison varieties. Sweet Peas were shown by Mr. Highgate, Yester House, Gifford.

Table Decorations.

Three tables were decorated as for dinner. The 1st prize was awarded to Mrs. Ban, 1, Bruntsfield Terrace, for an arrangement of pink Carnations, Sweet Peas, and Gypsophila, with Smilax being used. The exhibit awarded the 2nd prize, from Miss Agnes Waite, 18, Balmoral Place, was rather heavy in appearance, but pretty pink and crimson Roses, mostly Ramblers, were employed in its arrangement; Mr. Winch, 3, Starbank Road, Trinity, was 3rd. A few nice Bouquets were shown.

Messrs. Perkins & Sons were awarded the two 1st prizes for Bouquets, and also for a Floral Design and a Floral cross, anchor and heart.

Fruit and Vegetables.

The fruit exhibited consisted mainly of a few dishes of Strawberries, Mr. Woodcock, Archerfield, Drem, being 1st with fine fruits of the varieties Royal Sovereign and Garibaldi, and Mr. Galloway, of Gosford, Aberlady, 2nd with the same varieties. Mr. Galloway showed Hale's Early Peach in very fine condition.

Vegetables made only a poor show. Mr. Kidd was 1st for a collection, as also for Cucumbers and Tomatos.

Awards.

A First Class Certificate was awarded to Mr. Downie for a seedling Acer, with large pink blotches on the leaves, and Awards of Merit to Messrs. Cutbush & Sons for Rose A. W. Cutbush, and Carnation General Kuroki.

In the competition for plans drawn up by young gardeners, the 1st prize was awarded to Mr. J. M. Webster, Millfield, the 2nd prize to Frank Phillip, Philiphaugh, and the 3rd prize to Andrew Dickson, Alloa Park Gardens.

Trade Exhibits.

The following awards were made to honorary exhibitors:—Messrs. Barr & Sons, 11, King Street, Covent Garden, London, Tulips (Silver Gilt Medal); H. & J. Caesar, Knutsford, Cheshire, Rustic Houses (Award of Merit); Cape of Good Hope Government, 73, Basinghall Street, E.C. (Silver Gilt Medal); H. Castle & Sons, Ltd., Baltic Wharf, Millbank, Westminster, London, S.W., Garden Seats (Award of Merit); Cross & Sons, Ltd., 19 Hope Street, Glasgow, Manures; Cunningham, Fraser & Co., Comely Bank, Edinburgh, Alpines and Hardy Plants (Silver Gilt Medal); Cutbush & Son, Highgate Nurseries, London, N., Alpines, &c. (Silver Gilt Medal); J. Dickson & Sons, 96, Hanover Street, Group of Plants; Dicksons & Co., 1, Waterloo Place, Groups of Plants (Gold Medal); Dobbie & Co., Rothesay, Pansies, Violas, &c. (Silver Medal); Mr. John Downie, 75 & 77, Shandwick Place, Group of Plants (Silver Medal); John Forbes, Buccleuch Nurseries, Hawick (Silver Medal); Messrs. J. & A. Glass, Princes Street, Daffodils (Silver Medal); W. Baylor, Hartland & Sons, Cork, Tulips (Bronze Medal); Hogg & Robertson, Ltd., 22, Mary Street, Dublin, Tulips (Silver Gilt Medal); Mr. Thos. Johnston, 18, Fullar Street, Renfrew, Garden Tubs; Messrs. Kent & Brydon, Darlington, Alpines (Silver Medal), R. B. Laird & Sons, Ltd., Frederick Street, Group of Plants (Silver Gilt Medal); Lister & Co., Dursley, Garden Tubs (Award of Merit); Mr. A. Pollock, Rustic Houses, &c. (Award of Merit); Messrs. Rotholl & Petrie, Cawdor Street Works, Man-Chester, Flower Displayer; Mr. L. R. Russell, Richmond Nurseries, Richmond, Clematis (Silver Gilt Medal); Scottish Mushroom Co. (1906), Ltd., Mushrooms (Cultural Commendation); Messrs. Shanks & Co., Lawn Mowers (Silver Medal); Mr. Peter Small, Engineer, Forfar, Lawn Mowers (Award of Merit); Messrs. J. Stormonth & Son, Kirkbride, Cumberland, Alpines (Silver Gilt Medal); Storrie & Storrie, Glencarse, Perthshire, Primulas (Silver Medal); Mr. D. W. Thomson, 113, George Street, Group of Plants (Silver Gilt Medal); Messrs. Peter Walker & Son, 51, Buccleuch Street, Garden Edging (Award of Merit); Mr. Young, Kinloch Castle, Hybrid Schizanthus (Cultural Commendation); Robt. Woodcock, Pears (Cultural Commendation).

PLANT PORTRAITS.

Cratægus Carrieri.—*Garden Album*, April, t. 16.

Cypripedium "Lawrebel" ×.—A cross between C. Lawrenceanum and C. bellatulum. *Garten Flora*, May 1.

Incarvillea Delavayi.—*Garden Album*, April, t. 15.

Nicandra violacea.—An annual plant with pinnately lobed foliage, large leafy calyx resembling that of a Physalis, and bell-shaped flowers 2 inches across, light blue, with a purple eye. *Revue Horticole*, May 1.

Spiræa van Houttei.—*Garden Album*, April, t. 14.

Trollius Europæus grandiflorus.—*Garden Album*, April, t. 13.

Obituary.

Mrs. Eliza Brightwen.—This kind-hearted and well informed lady, a great enthusiast in gardening and natural history, passed away at her residence, The Grove, Stanmore, on May 5, at the age of 75 years. Mrs. Brightwen, who was a Fellow of the Zoological Society, of the Entomological Society, Vice-President of the Selborne Society, and an active correspondent of many other learned bodies, spent the greater part of her time on her own beautiful estate, the gardens of which, under the care of Mr. J. W. Odell, are famed for the diversity of interesting subjects they contain. Always a student of nature, the deceased lady constantly studied both plant and animal life, and made notes for the works she wrote. Evidence of keen observation is given in her "Glimpses into Plant Life," dedicated to her friend Sir Joseph Dalton Hooker; "Side Lights on the Bible," in which the plants mentioned in the Bible are specially well dealt with; and her two works on "Wild Nature," in all of which her talent as a clever artist greatly helped. Mrs. Brightwen, who was a distant relative of Sir Thomas Hanbury, had tastes in gardening similar to those of that gentleman, including a desire to acclimatise hardy plants, and a great fancy for those of unusual structure or habit. She will be much missed, especially in the district in which she resided.

John Barron.—It is with much regret we record the death of Mr. John Barron, head of the firm of William Barron & Son, Elvaston Nurseries, Borrowash, Derbyshire, and well known as a landscape-gardener. Deceased died at his residence on May 7, in his 62nd year.

Geo. C. Swailes.—Many Rose and fruit growers will learn with regret of the sad and untimely end of Mr. Geo. C. Swailes, of the Rose Nurseries, Beverley, Yorks., who had made his name well known far and wide as a skilful Rose grower. He was also a capable judge of cut flowers and fruit, having for many years acted in this position at some of the best horticultural shows, where his genial manner always secured him a hearty welcome. He was the last direct representative of this old and well-known Beverley firm, and up to a few weeks ago had enjoyed robust health. A paralytic seizure, from which he never rallied, was the cause of death, which took place on May 4. He was only 51 years of age, and died unmarried. At all times deceased was ready and willing to do all he could for those interested in the Rose, and many will long remember the bunches and baskets of beautiful Rose-blooms given to them by the late George Swailes. No one in Beverley ever called him by the prefix "Mr." He was too well known and liked by all who came in contact with him to be addressed by anything but his simple name. His funeral took place on May 7 at St. Mary's Cemetery, Beverley, and was largely attended. Amongst the numerous wreaths which covered the coffin was one sent by the Beverley Chrysanthemum Society.—*C.L., Welton, East Yorkshire.*

ENQUIRIES AND REPLIES.

Polypodium fibre.—I shall be much obliged if any reader can inform me if the fibre of the Polypodium Fern (gathered fresh) is a good substitute for peat fibre, for Orchids. I find it impossible to get the latter good, but I can get any amount of fern, the fibre of which is of a nice brown colour, with hardly any earthy matter. I have of late grown my Cattleyas in Oak leaf and moss, with good results, but I find that the compost becomes sour after the second year, which does not happen when I add a third of peat fibre to the compost. I have seen the Polypodium fibre advertised, but I have met no one who has used it. Any information on the subject would greatly interest me. *C. N. Brameld, Pightley House, Spaxton, Somerset.*

Electricity and Street Trees.—Can any reader give information on the subject of electric wires and the difference of cost of installation when erected upon poles and when carried underground? Here the streets are aligned with trees, such as Cedrus Deodara, Araucarias, Palms, &c. In the town, which is a winter resort for tourists, we have five telephone, electric light, and street railway companies. All these have aerial wires. These wires are directly above the trees before mentioned. Now, when the leading branches or shoots touch these wires the companies send their employees along with saws and axes to cut away and remove several feet off them. The effect of this will be understood by those familiar with the sorts of trees I have mentioned. The matter has been discussed here freely. The inhabitants of the town deplore the disfigurement of magnificent specimens; however, their objections are invariably met by the companies owning these wires, asserting that the cost of a system of underground wires would make the cost of service almost prohibitive. *Sidney Redlands, Cal., U.S.A.*

ANSWERS TO CORRESPONDENTS.

Ampelopsis Veitchii: *E. P. N.* If you send us some of the cankered stem we will examine it. If it is fungoid disease you will do wrong to plant other specimens until you have thoroughly destroyed all traces of the affected plants and thoroughly sterilised the soil in which they have been growing. From your description we are inclined to think the failure is due to drought; large specimen plants against walls frequently die from this cause.

Aucuba: *T. E. W.* The green form, whether male or female, is the natural species, of which the variegated form is a mere variety.

Diacrium bilamellatum: *H. Haddon, Lynwood, Penarth.* We print your letter. "I am sending you a spike of Diacrium bilamellatum, an ally of D. bicornutum. As you will see, the flowers have not opened properly. The petals wither while yet in the bud stage, and the ovaries swell as though fertilized. I had the same trouble last year with two plants, and this year only two spikes have opened their flowers properly. The plants are swarming with ants, in the same manner as they are said to be when growing wild. The ants make their home in the hollow pseudo-bulbs, going in and out by the orifice which appears at the base of the mature bulbs. The ants ascend the spikes and go to the base of each flower after something. I think the failure of the flowers must be due to the action of the ants for the plants are strong and healthy." The flowers have the appearance of being close-fertilised, but examination with a lens shows that openings have been made on the under sides of the flowers. No pollinia were found, and the stigmatic surface seemed to have been disturbed. The flowers were not fertilised, but the swelling of the ovaries, and the consequent failure of the flowers, was probably caused by irritation of the stigma in the manner before remarked in Orchids.

Flue: *J. S.* The cleanings from the flue may be treated as soot, and may with safety be placed over the lawn.

Grape Spot: *W. H. T.* The spotting is caused by a fungus Glaeosporium ampelophagum. Cut away and burn all diseased berries, aud spray the remaining ones with liver of sulphur, ½ oz. to a gallon of water.

Grapes: *W. W.* Some of the berries are already spotted and will probably become more so; the roots are in an unsatisfactory condition. Many are dead, and the leaves of the Black Hamburgh are covered with warts, the result of defective ventilation and excessive heat and moisture. You might still apply the Bordeaux mixture or liver of sulphur ½oz. to a gallon of water, but of course you must not apply either when the berries show signs of colouring.

Lilies: *J. F. R.* The disease is due to Botrytis. Spray with sulphide of potassium, at the rate of one ounce of sulphide to three gallons of water. If this browns the young growth, add more water. Sprinkle the soil around the Lilies with quick-lime or soot.

Malformed Callas: *E. S.*, and others. The production of two coloured spathes is by no means uncommon. Every week, lately, we have had one or more specimens sent for inspection. We are obliged for your courtesy in sending us photographs, but we do not reproduce them, having already given illustrations of them.

Names of Plants: *A. D. 5.* Your cardboard box was crushed in transit. The flower appears to be a variety of Cymbidium eburneum.—*Geo. Monro.* Tritoma crocata variety miniata.—*A. B. G.* 1, Anemone fulgens; 2, Pyrus japonica; 3, Pilea muscosa.—*T. E. W.* Amygdalus nana.—*F. E. B.* Cœlogyne nitida.—*A. Y. L.* 1, Dendrobium capillipes; 2, Vanda cœrulescens; 3, Bletia Shepherdi.—*J. M.* 3, Dendrobium Falconeri.—*E. L.* 3, Dendrobium moschatum.—*A. C. H.* Odontoglossum Hunnewellianum. It is imported with O. crispum from one locality, and, mixed with such importations, may also be found O. Adrianæ, the natural hybrid between the two species named.—*T. H. C.* Rhynchosia cyanosperma.—*F. C.* 1, Tulipa sylvestris; 2, Veratrum album.—*G. R.* Spiræa Thunbergii.—*G. P., Harrogate.* Pyrus salicifolia.—*G. L. N.* We cannot undertake to name garden varieties. Send them to some grower.—*J. Mc.* Piptanthus nepalensis.—*H. H.* 1, Dendrobium Falconeri; 2, Zygopetalum crinitum.—*H. S.* Claytonia perfoliata.—*J. P.* 1, Ansellia gigantea; 2, Ansellia gigantea lutea.—*P. L. H.* 1, Dendrobium Parishii; 2, Dendrobium cariniferum; 3, Dendrobium Gibsoni; 4, Bulbophyllum suavissimum.—*R. F.* Rose Caroline Testout.—*Clevedon.* Tecoma jasminoides.

Orchids: *H. P.* The disease is an unusual form of what is termed "spot," and is caused by the deposition of moisture on the leaves when the atmospheric temperature of the house is at its lowest point. The employment of good ventilation, and keeping the air as dry as circumstances permit, will remove the cause. The damping down of the house in the evening, if the temperature falls much during the night, is the principal cause of "spot" in Orchids.

Peach trees: *A. T.* We do not think you can do anything to better the condition of the trees until autumn, when it would be good policy to lift them, and after making quite certain that the drainage is in a perfect state, plant the trees in fresh soil. That the trees have "gummed" is a proof that the roots are in an unsuitable medium or that the process of pruning was carried out later in the season than it should have been, and probably with greater severity than is needful when disbudding and thinning out of the shoots is done during the growing season. It does not follow that if fungus is present on the roots, and that this effects some of the branches, that all of them will be affected in like degree.

Peach Leaves Riddled: *A. C. W.* The injury is caused by the Shot Hole Fungus, Cercospora. Burn all the affected leaves and spray with liver of sulphur, using ½ oz. of the sulphur to one gallon of water.

Pear leaves: *W. J. P.* The leaves are affected with the Pear mite. Destroy the affected leaves.

Roses for growing in pots: *Bath.* Six excellent varieties for the purpose are Captain Heywood, H. P. (crimson), General Jacqueminot, H. P. (red), Mrs. W. J. Grant, H. T. (rosy pink), Mrs. John Laing, H.P. (pink), Liberty, H.T. (crimson), and Catherine Mermet, T. (rose). You will gain much information on the subject if you consult such works as *Roses in Pots* by William Paul, or *The Book of the Rose* by the Rev. Foster Melliar. You can obtain these and other works on the Rose from our publisher. The prices of the two works mentioned are 2s. and 6s. 4d. post free respectively.

Tomato: *E. W. F.* Your plants are affected with Tomato Rust, Cladosporium fulvum. Cut away the diseased leaves and burn them. Spray the healthy plants with Bordeaux mixture. See p. 136 of the *Calendar of Garden Operations*, to be had from our publishing office for 7½d. post free.

Tomato Plants: *Tomato.* It may be that the plants are growing unusually quickly in excessively rich soil, and that the leaves are not able to withstand the effects of bright sunshine, to which they are not so accustomed as would be the case later in the season. Admit more air to the house and throw some water about the floors and over other surfaces, that the atmosphere may be kept in a moister condition. Do not apply manures until some fruits have set. If you have reason to suspect the presence of fungus disease, or of Eelworms, send us specimens of leaf, stem, and roots.

Voles: *J.* W. We can only suggest poison, but this must not be used if game or rabbits are preserved in the adjoining covers; unless you could place the poison beneath a wire covering so that the game could not reach it. A poison the mice will take is composed of sugar and oatmeal or wheat flour, 6 ozs. each, carbonate of baryta ¼ lb.; and enough oil of aniseed to give the mixture a strong odour.

Vines: *Constant.* It is very likely the manure was too strong. Soak the border with clear water, after which the trouble will probably cease. If not, send further specimens in a week or two.

Vines: *H. H.* The leaves show signs of the disease called "Browning," the cause of which is still a mystery. Cut out the affected shoots and burn them. Apply water freely so as to induce vigorous growth.

Water Weed: *H. C. D.* A species of Chara or Nitella. A weak solution of sulphate of copper distributed over the surface of the pond will probably kill the plant. Rake out as much as you can of the weed and keep the water-fowl out of the way when using the copper solution.

Weed Killer: *A. A. W.* Why not use common salt? Its application is certainly less dangerous, and it is usually effective if made with care and repeated as often as necessary. Weed killers may be prepared from arsenic and soda or from carbolic acid. The carbolic acid should be diluted in 100 times its own bulk. Be very careful to protect box or other live edging plants from being touched with the liquid, which should be applied through a fine rosed watering can.

Communications Received.—J. C. Mc. P.—P. L. H.—J. P.—J. W. M.—C. W. (Wolverhampton)—A. E. M.—A. M.—Foster—W. J. T. (Jamaica)—W. W. P.—C. G. G.—R. S.—F. S. Bruges—T. H.—F. J.—H. H.—A. T. H.—W. T.—A. R. P.—J. H.—J. W. M.—Sanders—S. & Mc.—W. D.—H. R. W.—W. K.—S. C.—E. H. J.—H. J., photograph—H P.

For Market and Weather Reports see page x.

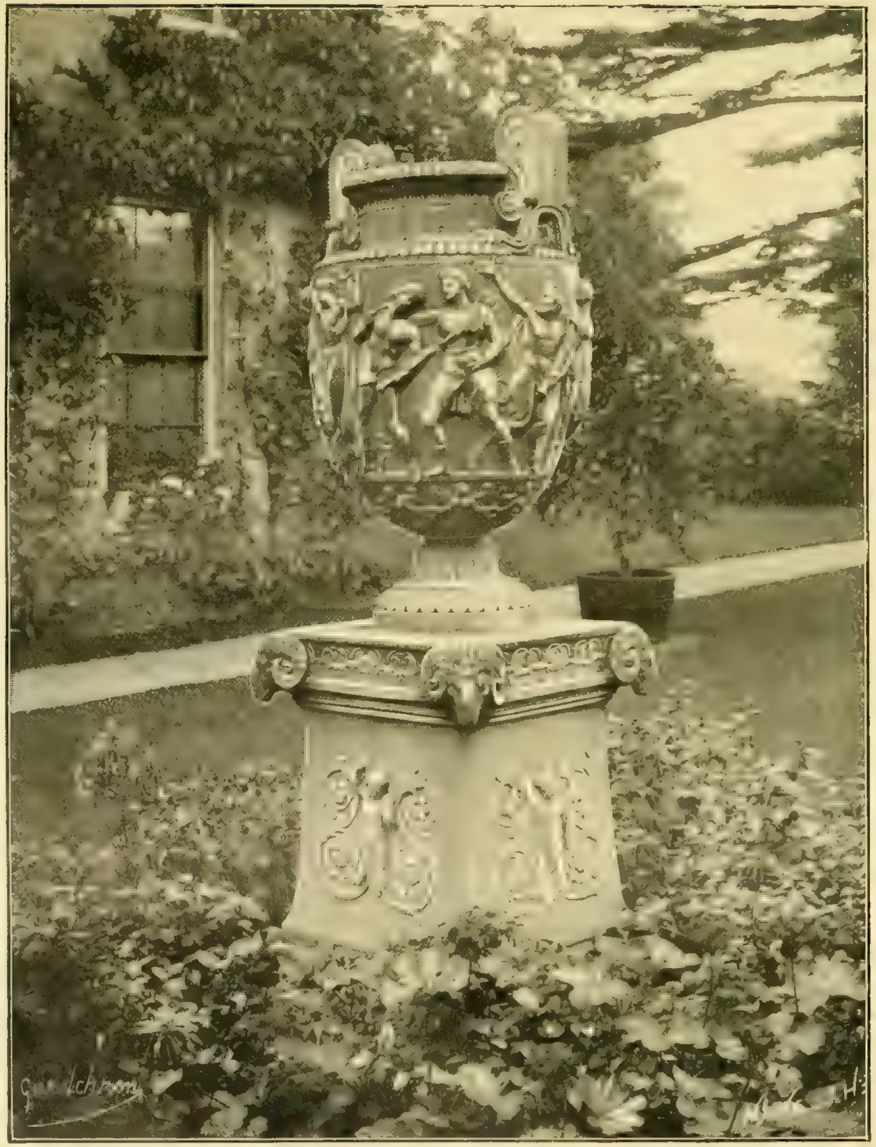

Photo by F. Mason Good

VASE IN THE GROUNDS, DOGMERSFIELD PARK, HANTS.

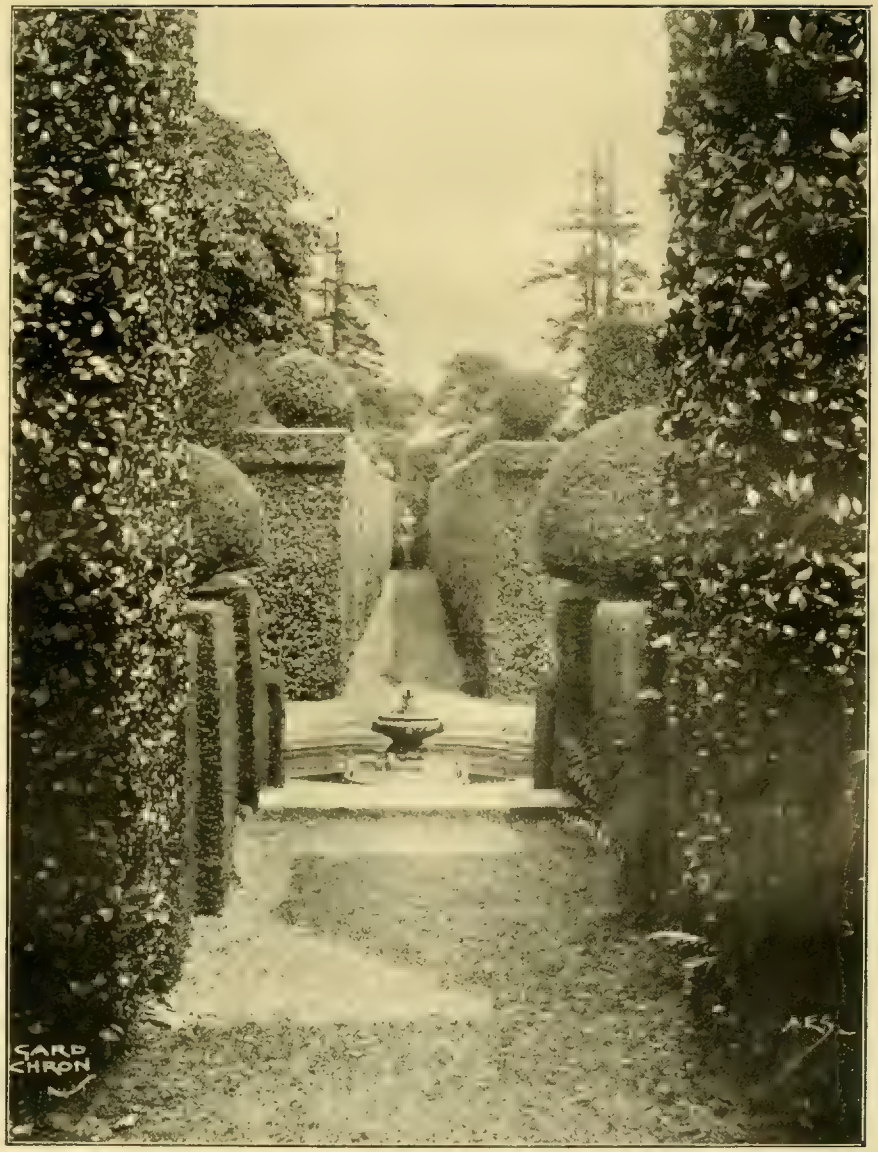

Photo by F. Mason Good.

THE EMPEROR'S RETREAT,
IN THE GARDEN OF MRS. MORANT, BROCKENHURST, HANTS.

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THE
Gardeners' Chronicle
No. 1,012.—SATURDAY, May 19, 1906.

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A WEEK IN GUERNSEY.

THOSE interested in horticulture should by all means visit the beautiful island of Guernsey, and the more they see of it the more interesting and beautiful it will appear; at least, so I thought at the conclusion of a recent visit, and in the following notes I shall endeavour to justify my assertions.

SAUMAREZ PARK,

the residence of MAJOR-GENERAL CAMPBELL, Governor, is the largest residence on the island, and is surrounded by extensive gardens and grounds. One of the great features of this place is the large collection of trees and flowering shrubs, which are scarcely, if ever, seen in England, unless in the sheltered nooks of Cornwall.

Camellias may be counted by the hundred, all fine, healthy plants, many of them ranging from 10 to 16 feet in height. They had just finished flowering at the time of my visit. Lapagerias, of the rose and white varieties, are quite at home and rambling at their own free will over the gateways in the gardens, indicative of their beauty when in flower.

Here also a fine plant of Embothrium coccineum was in full bloom, and a large specimen of Cytisus racemosus fragrans 12 feet high, which was quite a picture with its golden yellow blossom. Close by was a large specimen of Plumbago capensis covering a wall space of 12 feet by 12, together with that lovely creeper Clianthus puniceus, with its large clusters of bright red flowers.

I was told these were destroyed to the ground by frost some 15 years ago, along with the specimens of Dracæna indivisa, but they all started again from the lower part of the stem, and Dracæna indivisa has since made growth of from 16 to 24 feet in height. Specimens are frequently met with in numbers on the island, and give it an almost tropical appearance. Many of the best hybrid Rhododendrons were in full bloom. Planted singly or in large clumps, as they are here, with a background of foliage plants, they present a most attractive appearance at this season of the year. Fine bushes of Daphne Blagayana were in full bloom, also Edwardsia microphylla. Pittosporum Tobira is planted very extensively, many of the specimens being 12 feet high, and by the time these lines are in print they will be in full bloom.

A great feature in these gardens is the Japanese house built by the present Lord de Saumarez some years ago, all the material being sent from Japan; men were also brought over to carry out the work. The garden surrounding it is separated from the other portions of the ground, and planted with a great variety of trees and shrubs sent over from Japan. Different varieties of Bamboos and Pines have made remarkable growth, and give to the garden a unique appearance.

The glasshouses are rather extensive, the majority being devoted to vines, all of which are looking very promising. On the back wall of the greenhouse, which is about 70 feet long by 14 feet high, I saw the finest plant of Fortune's Yellow Rose I have ever had the privilege of seeing. With the exception of 8 feet at one end, it covered the whole of the wall space, and some hundreds of blooms are cut annually from the trees.

MELONS FOR MARKET.

A special visit was made to Mr. CORBETT'S market gardens; the chief thing grown here are melons, and I understand that he has gained the title of the "Melon King."

Gardeners in England are satisfied with a crop of Melons of from two to three dozen, but at Mr. Corbett's garden they may be counted by the thousand. Mr. Corbett is a most genial man, and has no secrets to keep from anyone, as he is quite willing to tell all particulars respecting the growing of the plants, from the sowing of the seed until the fruit is fit to cut.

The houses in which the Melons are grown range from 200 to 300 feet in length and about 35 feet in width. The plants are grown in pots 14 inches in diameter and placed close together in rows along the houses; the plants are trained up strings, and each plant is only allowed to carry one fruit each; Sutton's A1 is the only variety grown.

It is a sight to see these houses all filled with plants in the finest possible condition and in different stages of growth.

Mr. Corbett when we arrived had just finished cutting the last fruits in one of the houses, amounting to close upon 400, all perfect fruits, and was busy packing them in oval baskets and boxes, ready to be sent to London early on the following morning. Mr. Corbett devotes eight houses to Melons alone, and the crop for the whole of the season amounted to close on 20,000 fruits.

Mr. Corbett also grows a large quantity of Tomatos, which were looking remarkably well.

THE CALEDONIA NURSERY.

After leaving Mr. Corbett, we next wended our way to Messrs. C. SMITH AND SON'S Caledonia Nursery, where we met with the kindest attention from Mr. Smith, jun. The nursery itself is situated in an ideal spot, being sheltered from all winds. Here we found the choicest varieties of Rhododendrons in full bloom; amongst them were fine plants of R. Kewense, R. grande, R. Thomsoni, R. Countess of Haddington, and others too numerous to mention.

Azaleas are also a great feature, fine, large, healthy plants, all covered with flower-buds and many in full bloom.

The largest plant of Embothrium coccineum I have ever seen was full of bloom. Mr. Smith informed me that it was 20 feet high. Bamboos are doing remarkably well here and in great variety. It would be impossible to mention a tenth part of the occupants of this most interesting nursery, but here may be found growing, side by side, Rhyncospermum, Clianthuses in variety, Edwardsia microphylla, and scores of other tender plants, which makes one regret that one cannot have them in our gardens at home.

At these nurseries, on the end of a barn, are growing the finest Cordon Pear trees I have met with; they are some 30 feet in height, and have every prospect of bearing a heavy crop of fruit, the variety being Doyenné du Comice.

A MARKET GARDEN.

A great treat was in store when we were privileged to visit the large market establishment of Mr. BELL, who, with characteristic kindness, took us over the whole of the glass department.

Here we found Carnations took the premier place, and I should say we should have to travel far before we met with such a stock of fine, healthy plants as are to be found here. The houses in which they are grown average from 300 to 400 feet in length and 35 feet in width.

The varieties chiefly grown are Enchantress, a lovely pink variety (this is grown by the thousand); also Mrs. Lawson, and the white variety of the last-named Carnation.

Mr. Bell informed me that he grows between 15,000 and 16,000 plants, and I understand it is his intention to exhibit at the forthcoming Temple Show.

At this establishment I saw the finest houses of Grapes during my visit, the variety being Canon Hall Muscat.

Daffodils are grown by the million all over the island, but the season was just past, their place being taken by the Tulips, especially the Darwin varieties; these are grown in tens of thousands by Messrs. W. MAUGER AND SON, who were cutting their first consignment on April 26; there must be a great future before these varieties of Tulip, as they lend themselves to all kinds of decorative purposes, having very long flower-stems and flowers of every imaginable colour. Spanish Irises and Gladiolus "The Bride" are quite as extensively grown and in the finest possible condition.

One great feature in these gardens is the movable houses, some four in number, each being 100 feet in length by 30 feet in width. Early in the season these were placed over

Freesia refracta alba, afterwards moved over large breadths of Ranunculus, which were just over, and on the day of my visit they were being placed over Spanish Irises and Gladioli.

I may say these houses may be moved along the rails by four men. Everything in this large establishment was in perfect order.

Fig trees are a great feature all over the island, and below I give the dimensions and crop of the three largest. No. 1, belonging to Mr. Falla H. Moenge, is 45 feet long by 30 feet. It carries annually some 1,100 dozen fruit; this tree is supposed to be over seventy years old. No. 2 is growing in Mr. La Tissue's garden, and the dimensions of the tree are 60 feet by 47 feet, and the average crop for the past three years has been 700 dozen. No. 3 is owner by Mr. Morrish, who has one of the largest establishments on the island; this tree is 80 feet long by 40 feet, and is supposed to be 100 years old. It carries four crops annually, and totals 1,000 dozen fruit.

I heard of several complaints of the insufficiency of shed room on the quay for the enormous consignments which are sent from the island, large piles of boxes containing fruit, flowers, and vegetables being exposed to the full rays of the sun, which must be most detrimental to them.

I think if the growers would bring their case before the two railway companies and the States, a remedy would soon be found which would be most beneficial to the growers and the general public. *R. Milner, Margam Gardens.*

VIOLA MARY BURNIE.

THE "Viola" is a valuable bedding subject, and it is adaptable for a variety of uses, thus it can be planted as a ground-work to beds of taller subjects, or for massing in beds by itself; it also makes an excellent edging plant, while for bands and borders it is employed in almost every garden. Messrs. Dobbie & Co., Rothesay, have displayed some excellent exhibits of these flowers at the recent meetings of the Royal Horticultural Society, and among them was a fine variety named Mary Burnie, shown in fig. 124. The flower is of a soft shade of yellow, margined with a narrow band of violet colour. As will be seen on reference to the illustration, the flower is of large size and good shape.

NEW OR NOTEWORTHY PLANTS.

VIBURNUM CARLESII, HEMSLEY.

A FIGURE of this new Viburnum appeared in the *Gardeners' Chronicle* for October 11, 1902, p. 261. The species had previously been described by Mr. W. B. Hemsley in the *Index Floræ Sinensis* as long ago as 1888, but it was not until the early part of 1902 that the living plant was introduced to cultivation. A single specimen was at that time sent to Kew from the well-known establishment of Mr. L. Boehmer, of Yokohama. It has now flowered for the first time, and proves to be not only a quite distinct species, but a very charming one as well. This, indeed, we were led to expect from Mr. Unger's note which appeared in the *Gardeners' Chronicle* above quoted. It is a native of Corea, and was introduced from that country to Japan by Boehmer & Co. in 1897.

To judge from the small plants we at present know the species by, Viburnum Carlesii is a shrub of rather open, loose habit. Its leaves are small compared with the common species in cultivation, being from 1 to 2 inches long, ovate-elliptical, and irregularly serrate; both surfaces are covered with a short tomentum, especially on the prominent veins beneath. The flowers are borne on a terminal cyme 3 to 4 inches across, and are delightfully fragrant. Opinions vary as to what the fragrance resembles, but to me it most strongly suggests a combination of Gardenia and Lilium longiflorum. The flowers are uniform; that is to say, the species is not one of those Viburnums (like our own V. Opulus) which bear two kinds of flower on one cluster, showy sterile ones and smaller fertile ones. They are all of the fertile kind, with the corolla ½-inch in diameter, and having a narrow cylindrical tube. The flower-buds are pink, and the newly opened blossoms are faintly suffused with the same colour, but ultimately they become almost or quite pure white. Nearly every one who sees the inflorescence for the first time remarks on its close resemblance to that of a Rondeletia, the flowers being set in the same compact rounded cluster, and each showing the same narrow tube.

Hitherto the plant has received some protection at Kew during the winter, but whether this is really necessary I do not yet know. Mr. Unger believes it to be quite hardy. If this should prove to be so, the species will make a charming addition to our hardy shrubs, flowering as it does in April. It is as easily propagated by means of cuttings as the other species. *W. J. Bean.*

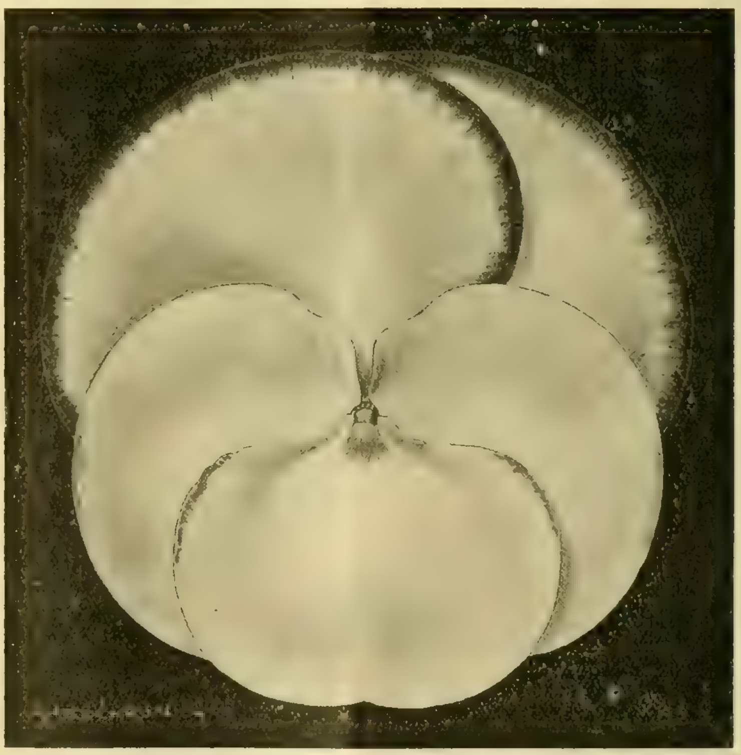


FIG. 124.—VIOLA MARY BURNIE; COLOUR, PRIMROSE YELLOW, BORDERED WITH VIOLET.

KEW NOTES.

INTERESTING HARDY PLANTS IN FLOWER.

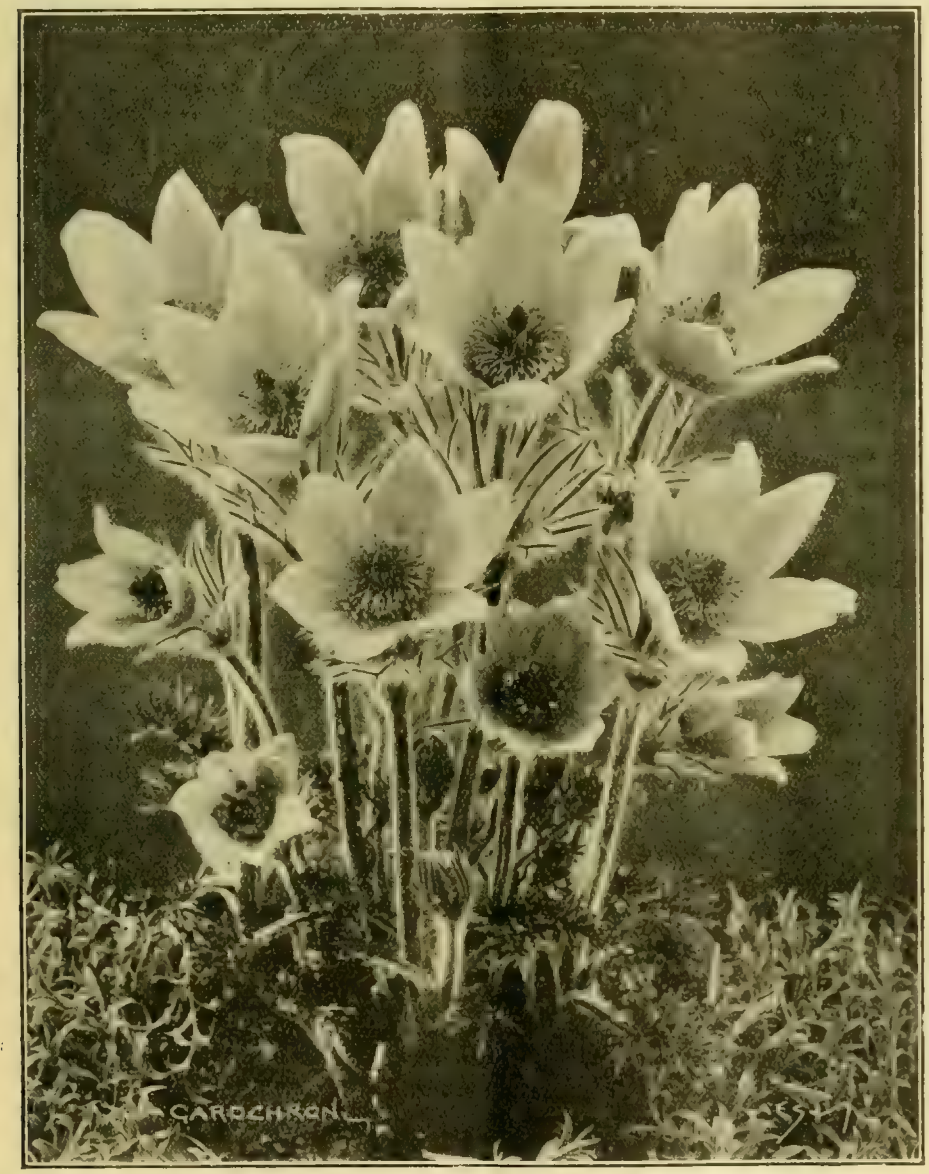
SINCE the recent favourable change in the weather, plants have been developing rapidly, and many, such as the Candytufts, Aubrietias, and Trilliums are now at their best, a week or two later than usual. The dwarf Irises of the pumila and Chamæiris sections are just beginning to make a show with their flowers of different shades of white, yellow and purple. Several of the Regelio-cyclus hybrid Irises are also in bloom with flowers of great beauty and variety of colouring. This new race promises to be more amenable to cultivation than the Oncocyclus section, while retaining to a great extent the conspicuous beauty and remarkable colouring, as well as size, of the largest cushion Irises. Those in flower include I. Charon, a handsome flower in which the chief colours are gold and bronze; I. Antigone, which is a cross between I. Korolkowi violacea and I. iberica, has silver-grey and lilac flowers, deeply veined, showing the influence of the latter parent to a great extent. Others equal in beauty are I. Calypso, I. Psyche, I. Jocaste, I. Isis, I. Hesperia, I. Hebe, I. Hera, I. Medusa, and I. Sironia. Under a south wall the rare Persian species I. obtusifolia is also opening its fine yellow flowers. In this position it is a robust grower, but, so far, it has failed to survive a winter in the open border. One of the most attractive hardy perennials at present is Euphorbia epithymoides, also known as E. polychroma. It makes a compact plant, about 18 inches high, with many stems and heads of bright yellow inflorescences. A native of Central and Eastern Europe, it is generally found growing on rough wooded hills. A charming little plant is Physaria didymocarpa. This new Crucifer belongs to a small genus, the members of which are closely allied to Vesicaria. They are all natives of North-western America, growing chiefly in mountainous regions on gravelly and rocky slopes. P. didymocarpa is a perennial, forming a rosette of spatulate leaves, canescent, with a white stellate pubescence. From the axils of the leaves many leafy stems are produced on each plant, about 3 inches high, bearing a raceme of bright yellow flowers. It is quite hardy, but requires a well-drained position in stony soil

Tubers of Aponogeton capensis were sent to Kew last year by Mr. Chalwin, of the Public Gardens, Cape Town, and it is now flowering in the hardy aquatic tank. It may be described as a miniature A. distachyon, with small leaves on long petioles and small white flowers. It is apparently closely allied to the South African A. angustifolium.

The genus Corydalis is well represented by the Siberian C. bracteata, with its racemes of lovely yellow flowers. It is one of the choicest species, but is not a robust grower like C. nobilis. This last is also in full bloom, forming a bush-like plant, with handsome foliage-topped with racemes of yellow and chocolate-coloured flowers. China is represented by the woolly-leaved C. tomentosa, as well as by C. thalictrifolia.

Phlox Douglasii is a rare species from the Rocky Mountains, which varies a good deal in the colour of its flowers. Those now open are large and nearly white. It is of tufted habit, with rigid leaves, and generally grows in dry, sunny positions in its native habitats.

Two of the most fascinating Tulips are the brilliant scarlet T. linifolia, with its flowers close on the ground, and the yellow T. Batalini, which is very little higher. They both come from Central Asia, and are ideal plants for the rock garden.



[Photo by E. J. Wallis.

FIG. 125.—ANEMONE PULSATILLA AS IT FLOWERED RECENTLY AT KEW.

Other plants in flower include Epimedium concinnum and E. rubrum, Polemonium confertum var. mellitum from the Rocky Mountains, with its white flowers, Phlox divaricata in its various form of alba, canadensis and laphami; Fritillaria recurva, Anemone palmata and var. alba, and the ivory-white Alyssum pyrenaicum. *W. I.*

[An illustration of Anemone Pulsatilla as it recently flowered at Kew is reproduced in fig. 125.—Ed.]

BLUEBELL-TIME AT KEW.

A great many people who are not specially interested in plants in general pay a visit to Kew between the middle and end of May to see the Bluebells. There are several Beechwoods in the neighbourhood of the Lake and Pagoda that are carpeted with them, also the ground on each side of the central walk through the Queen's Cottage grounds. These masses of colour, many acres in extent, are relieved here and there with patches of bright green grass with occasional clumps of pink Lychnis, while out of them rise the stately trunks of the Beeches, relieved here and there with the distinct bark of an Oak or Chestnut, the whole being crowned with a covering of new and bright green leaves. *W. D.*

THE RHODODENDRON DELL AT KEW.

One of the most popular features at Kew during May and June is the Rhododendron Dell. Situated in the westerly part of the gardens it runs for a distance of between 400 and 500 yards between the Syon Vista at the southerly end, and the Brentford entrance at the northern end. The centre is given up to a winding and undulated gravel path, and on either side the irregular banks rise in an informal manner to the level of the ground in the vicinity. On these banks the Rhododendrons are planted and many of them have assumed large proportions. The varieties are freely intermixed so that a wide range of colour is exhibited; white, pink, blush, rose, red, lilac and purple blending delightfully together. As a background there are large deciduous and coniferous trees, and the varied tints of pale green of the young leaves of the former and the darker and more sombre hues of the old foliage of Cedar and Pine, frame, and materially help to complete, the picture formed by the Rhododendrons below.

Although the Dell is one of the oldest features at Kew, it is continually being improved, and during the past winter a considerable addition has been made at the south-end, many of the larger specimens that were becoming crowded and ruined in the older part being removed to furnish the new portion.

Of the older varieties, some of the finest specimens now in blossom are: Broughtoni; Lord Palmerston; Macranthum; Grand Arab; purpureum splendens; fastuosum fl. pl.; The Queen; Minnie; Coriaceum; Chas. Noble; Lady Eleanor Cathcart, and others. Of more recent sorts may be seen Lady Clementine Mitford: James Naysmith; Ascot Brilliant; Michael Waterer; Helen Waterer; Kate Waterer; Mrs. A. Waterer; J. B. Hayes; Mad. Carvalho; Hermit; Mrs. Hunniwell; Sappho; Old Port; Amphion; Alexander Dancer; Auguste van Geert; Doncaster; Duchess of Connaught; Lady Grey Egerton; John Waterer, and others.

The group raised by crossing various varieties with the fragrant Chinese species R. Fortunei is represented by a number of specimens which are very free in flowering, the flowers being of various shades of pink. Varieties of R. Griffithianum parentage include Manglesii, Pink Pearl, Mrs. G. Paul, Kewense, &c.

Though species do not predominate in the Rhododendron Dell, several are to be found, some of the more noteworthy being R. Fortunei, R. Smirnowi, R. catawbiense, R. californicum, R. cinnabarinum, R. campylocarpum, R. campanulatum, and R. fulgens. *W. Dallimore.*

TREWIDDEN.

About a mile and a half from Penzance, on the Land's End road, lies Trewidden, the seat of Mr. T. B. Bolitho, late member of Parliament for the Penzance division of Cornwall. The gardens, which are of considerable extent, contain a very complete collection of rare and tender shrubs and other subjects, almost all of which, owing to the care exercised in their planting by the head gardener, Mr. George Maddern, are in the best of health. On the side of the house occupied by the front door many rare plants are grown, amongst these being Callistemon salignus, Clianthus puniceus, the white Macartney Rose, Rosa lævigata, Tacsonia exoniensis, Lonicera Hildebrandiana, Hydrangea scandens, Abelia floribuna 10 feet in height, Mitraria coccinea, and Chorizema Lowi. On the lawn opposite stands a fine Embothrium coccineum, which is backed at a little distance by an open wood containing Tree Ferns. Against a high wall on the opposite side of the house are growing Trachelospermum jasminoides, Raphiolepis ovata 8 feet in height, Camellia reticulata, Callicarpa purpurea, Berberidopsis corallina, Cestrum elegans, rose and white Lapagerias which fruit freely, Proustia pyrifolia, Vitis Coignetiæ, and V. flexuosa. In the bed in front of this wall are great bushes of the Pineapple Salvia, S. rutilans. Passing through a door, one enters a small walled garden, which formerly contained one of the finest specimens of Daphniphyllum glaucescens in England, since dead. Covering the walls are to be seen Mandevilla suaveolens, Lathyrus pubescens, Inga pulcherrima, Pentapterygium serpens, Thibaudia acuminata, in flower in October, Fuchsia triphylla (covered with brilliant flower-clusters at the same time), Jasminum primulinum, a variegated form of Berchemia racemosa, Plumbago capensis, Sollya hetero.

phylla, Kennedya alba, Pentstemon cordifolius 8 feet high, Lonicera gigantea, Phænocoma prolifera, Manettia bicolor, Agapetes buxifolia, Brachysema acuminatum, Lophostemon confertifolium, Acacia playtptera, A. ovata, and A. cultriformis 8 feet in height and 10 feet across. The north walk is bordered by fine specimens of the Fan Palm (Trachycarpus excelsus), Phormiums and Conifers. In the grass on either side are growing Magnolia hypoleuca 30 feet in height, Azara microphylla 20 feet, Garrya elliptica and G. Thureti, Guevina avellana 10 feet high (a layer from the tree at Greenway, Mr. Bolitho's seat on the Dart), Viburnum Awafuki 30 feet in height and 20 feet through, Acacias dealbata, verticillata, and longifolia, Drimys aromatica, Andromeda axillaris 6 feet high, Pseudopanax crassifolium, Cordyline indivisa vera 9 feet high, Enkianthus japonicus, Hydrangea quercifolia, several Maples, Acer sanguineum being 12 feet high and 15 feet through, Podocarpus andina, Retinospora tetragona aurea, Thuya gigantea aurea, and the Parasol Fir (Sciadopitys verticillata) 20 feet in height.

From the north walk access is gained to the north garden, laid out about 14 years ago. This is a level piece of ground surrounded by wide borders, backed with Conifers and other trees. In the border numerous rare shrubs are well grown. The centre is grassed and contains a sheet of ornamental water, in which the best of the Water Lilies are grown, and large informal beds of Cannas and tuberous Begonias show up brightly from the green turf. Among the Oaks growing in this garden may be mentioned Quercus cuspidata and its variegated form, Q. coccinea, Q. marylandica, Q. macrophylla, and Q. dentata, while of Conifers Abies nobilis glauca, Cedrus atlantica glauca, Picea pungens glauca, Kosteri, and Abies Webbiana are noteworthy. In the fine collection of shrubs are Buddleia Colvillei—which has flowered, Stuartia pseudo-Camellia, Exochorda grandiflora, Styrax Obassia 10 feet high, Desfontainea spinosa, Aralia palmata, Abutilon vitifolium, Acacia armata, Gingko biloba, Magnolia macrophylla and M. Watsoni. Here also may be found what is probably the finest specimen of Eucryphia pinnatifolia in the British Isles, 18 feet in height and 15 feet through, which every August is a mass of white blossoms. The following are also worthy of mention: Eucryphia cordifolia, Feijoa Sellowiana, Cæsalpinia japonica, 7 feet high and 9 feet through, Eupatorium micranthum, Choisya ternata, Styrax japonica, 12 feet by 12 feet, Griselinia macrophylla, 20 feet in height, Schinus terebinthifolia, Ozothamnus rosmarinifolius—a splendid specimen 15 feet in height and as much in diameter, Calceolaria violacea, Leptospermum scoparium, Araucaria Bidwilli, Romneya Coulteri, Tricuspidaria lanceolata, Castanea chrysophylla, Perowskia atriplicifolia—a pretty shrub with grey foliage, bearing long sprays of lavender flowers in October, Davidia involucrata, Drimys Winteri, Fabiana imbricata, Raphiolepis Delacourii, R. indica, Clerodendron trichotomum, Euryops virgineus, Pavia macrostachya, Koelreuteria paniculata, Cotoneaster pannosa, Nandina domestica, Cerasus Watereri, 25 feet high, Amelanchier canadensis, very beautiful in the early spring when in flower, and also in its autumn tints, Gordonia grandis, Fatsia Sieboldi, Cassia biflora, Solanum crispum, Grevillea thyrsoides, Staphylea Columbieri, Pomaderris argentea, Medicago arborea—bearing orange-yellow flowers in October, Escallonia Phillipiana, E. langleyensis ×, and a white-flowered seedling, one of the parents of which is apparently E. macrantha, which appeared at Trewidden many years ago, and has been provisionally named E. Bedfordi ×. The largest shrub of this is about 25 feet in height, and as much through, and was in full flower at the time of my visit. Phormiums in this garden have attained a height of 12 feet, and Cocos campestris, Cordyline australis atropurpurea, C. Hookeri, and Yucca gloriosa variegata are doing well. Among other plants observed were Senecio grandiflorus, S. clivorum in flower, and Echium callithyrsum, 6 feet through.

Passing to the west garden by a winding path through trees, one comes upon a deep depression in the ground which tradition holds to have been the first tin mine in Cornwall. This is very informal in contour, and is filled with fine Tree Ferns, some of whose fronds are over 10 feet in length, and giant Gunneras. Passing along a narrow path that runs, high up, at one side of the dell, the head of a fine Embothrium coccineum is seen, that in the spring is a blaze of scarlet; there are eight of these brilliant-flowered trees in the Trewidden Gardens. In the west garden, well sheltered by evergreen trees, are Musa Ensete, a handsome Clethra arborea, 15 feet in height, Corokia buddleoides, 10 feet high, and numerous Rhododendrons, of which the following are grown: R. grande (or argenteum), which flowers at the end of January, R. Shilsoni, R. barbatum, R. Falconeri, R. Griffithianum, R. Thomsoni, R. calophyllum, R. campylocarpum, R. glaucum, R. campanulatum, R. Nuttalli, R. eximium, R. racemosum, R. arboreum in variety, R. Roylei, R. Maddeni, R. Beauty of Tremough, R. Countess of Haddington, R. Pink Pearl, R. Mrs. Henry Shilson, and many others. In the rock garden, furnished with masses of granite, over which Arenaria balearica and Gaultheria procumbens have spread, the best of the Erythroniums, Fritillarias, bulbous Irises, Ixias, Sparaxis, and Lilies are grown. Schizocodon soldanelloides was looking very healthy, as were Shortia galacifolia, Morisia hypogæa, Pourettia mexicana, Primula megaseaæfolia, P. rosea, Gerbera Jamesoni, Celmisias coriacea, and C. Munroi—the last, 2 feet across. Crocosmia imperialis was in fine bloom, Fuchsia microphylla was bearing its small red flowers, and the blossoms of a bush of Hydrangea Mariesi were of a fine blue.

Across the kitchen garden a high retaining wall has lately been built, facing due south, and against this a number of rare exotics have been planted, that in a few years' time should provide one of the most interesting and beautiful features of the grounds. They comprise Correa cardinalis, Calceolaria Burbidgei—in flower in October, Lagerstrœmia indica, also in flower at the time of my visit in October, Cantua dependens, Lotus peliorhynchus, Hibiscus brilliantissimus, Dimorphotheca Ecklonis, Lasiandra macrantha, Hibbertia dentata, Abutilon vexillarium variegatum, Russellia Lemoinei, bearing scarlet tubular flowers, Swainsonia, rose and white in flower, Grevillea Preissi, Streptosolen Jamesoni, Bignonia capreolata, Genetyllis fuchsioides in bud, Alonsoa Warscewiczi in full bloom, Alberta magna, Tetracera ericoides, Leschenaultia biloba major, Solanum Wendlandi, Cæsalpinia Gilliesii, Cassia marylandica, C. corymbosum in full bloom, Bougainvillea glabra, Eriostemon buxifolium, Adenocarpus frankenioides, Anagyris fœtida, Aphelexis fasciculata, Mimulus glutinosus, Cestrum Parqui, Tacsonia quitensis in flower, and Maurandia scandens. Amongst other plants in the bed facing the wall were Incarvillea variabilis, Myosotidium nobile, Astilbe Davidii, Senecio tanguticus, and Rehmannia angulata. The road from the lodge to Penzance is faced for some distance with ornamental shrubs of many kinds, including Veronicas, Fuchsias, variegated Eleagnus, Teucrium fruticans, Prunus Pissardi, Choisya ternata, Escallonias, Hydrangeas, Cassinia fulvida, Rhus Cotinus, Tree Heaths, Griselinia, Olearias, Brooms, Rhododendrons, Fatsias, Cytisus racemosus, Berber's Thunbergi, B. stenophylla, B. Darwini, Cordylines, and Phormiums. In other parts of the ground many great clumps of Eryngium pandanifolium, with dozens of towering flower-spikes, were very handsome at the time of my visit. *S. W. Fitzherbert.*

THE PROPAGATOR.

Centaurea candidissima.

This is rather a difficult subject to strike from cuttings taken in the usual manner, and the operator will be more successful if he stops the shoots on the mother plants which show flower-buds, in order to induce the formation of further shoots. When these have made from five to six leaves pull them almost away, just leaving them attached by the rind to the mother plant. These should so remain for a week, during which time they will remain fresh and healthy, and the wound will callus, a most essential point in averting decay in the cuttings. The cuttings may be then detached, placed singly in small pots filled with sandy loam, and plunged in a bed having a bottom warmth of 56° to 62° *Fahr*. The best time is the beginning of July; but an earlier date may be chosen, if a large stock of plants is looked for.

Ipomœa insignis, Horsfalliæ and ternata.

These strike freely from strong side-shoots taken with the eyes, and placed in sandy leaf-mould 1 inch deep, and sunk in a bed having a bottom heat of 75° to 80° *Fahr.*, covered with a bell-glass, and kept moderately moist. The cuttings soon push forth roots when they should be potted in peat, leaf-mould and a little sand, except the species I. purga, which does best if loam be added to the other ingredients. The growth of the young plants must be maintained as long as possible during the winter, so that drying off may be avoided to a late period, and with this intent, they should be placed in the warmest part of the stove, and in the case of the last-named close to the glass.

Acrotriche.

These may be struck from cuttings in this month, or in September in peat $\frac{1}{3}$ and washed silver sand $\frac{2}{3}$, under bell glasses, in a temperature of 55°-58° *Fahr.* The leaves at the base should be removed with a knife.

Bambusa.

It is a favourable month for propagating Bamboos from the underground rhizomes, which should be cut into pieces consisting of two knots or joints, and laid on a hot bed of tree leaves and stable dung, covered with a mixture of peat and garden soil, the former in the proportion of $\frac{3}{4}$ and the latter $\frac{1}{4}$, the entire layer being 2 inches deep, and covering the cuttings with the mixture about $\frac{1}{4}$ inch. The surface of the bed should be not more than 2 or 3 inches below the sashes, and the bed possess a continuous bottom heat of about 70° *Fahr.* With this degree of warmth and moderate applications of water, the joints of the rhizomes exhibit shoots, at the base of which roots form subsequently, and when nicely developed these may be detached together with a portion of the rhizome, and potted up, placing the pots on a warm bed for further developement. Those portions that remain over may be replanted as before.

Chorizema.

Cuttings of the half-ripened shoots, with a heel of the older wood, may now be taken. They may be struck in sandy peat surfaced with sand, under a bell glass in a temperature of 50° to 55°, and a moderate degree of moisture.

Boronia.

The species B. serrulata should be brought into growth ere the cuttings are taken, and these should consist of the points of the new shoots, cutting them square across under a bud, and removing the lower leaves with a sharp pair of scissors. The cuttings should be put into pots of sandy peat, covered with a bell glass having an opening at the top and bottom. Heat is not required, and only a moderate amount of water. The ordinary propagating house is a suitable place for them. B. megastigma, B. heterophylla and others should be propagated from ripe wood, and the cuttings may have a length of 3 to 4 inches.

ARTOCARPUS.

Those gardeners who possess a specimen of A. incisa, Bread Fruit tree, and may care to increase their stock of this plant may do so by fastening a small pot, filled with soil, round the leading shoot, and in two months it will be rooted and may be removed, as is done with Cordylines, Codiæums, &c. After the removal of the rooted leader side-shoots will form, which are suitable for use as cuttings. These should be cut off at a length of 5 inches, possess 3 to 5 leaves, and be taken close up to the stem. Place them in a mixture of leaf-mould of 1 part, sandy or light loam 1 part, and sand 1 part; over all an inch layer of sharp, clean sand should be spread. The cuttings, with all their leaves on them, should be inserted without loss of time, and at the first receive only a moderate quantity of water—that is, till the wound should form a callus, the sap being of a milky nature. The cuttings require a bottom heat of about 80° *Fahr.*

MISCELLANEOUS.

Evergreens of many species may now be layered, and if the layers are of the present year's growth they will root readily. Violets, both double and single-flowered varieties, may be taken up and the strongest young rooted runners separated from the mother plants, the roots slightly shortened, and be planted at a foot apart in lines in some half shady part of the garden; as, for instance, the midway spaces between the Currant or Gooseberry bushes. They should be firmly planted with a dibber and the soil kept moist, especially in hot weather. *F. M.*

MANURIAL VALUE OF SEA-WEED.

SEA-WEED, or vraic, as it is sometimes called, is highly valuable as manure, and as such is largely used in the Channel Islands and on lands in the vicinity of the sea coast of our own country. Mr. F. W. Toms, F.C.S., the official analyst of Jersey, has been at some pains to test by repeated analysis the range of chemical composition usually met with in these plants. A ton of fresh weed free from sand contains about 15 cwt. of water, 4 cwt. of organic matter, and 1 cwt. of mineral matter. In the 4 cwt. of organic matter there will be found 8 to 14 lb. of nitrogen (equal from 10 to 17 lb. of ammonia), 15 to 20 lb. of potash, 10 to 12 lb. of lime, 30 to 40 lb. of common salt, and 2 to 6 lb. phosphoric acid. Sea-weeds are of value for keeping the ground moist, in addition to supplying plant-food constituents. The writer has seen some remarkably good Asparagus grown in very poor sandy soil by the aid of Sea-weed alone. They contain a high proportion of soda compounds, especially sodium chloride (common salt). This is most marked in shore-weeds, and at one time these were burnt for the alkali they contained. Cattle appear to appreciate grass that has been top-dressed with vraic, doubtless on account of the agreeable flavour derived from the salt. The constituent, however, to which Sea-weed owes its chief value as a fertiliser is potash.

This element stimulates the growth of Clovers in pasture lands, and is especially valuable for soils in which Potatos, Beans, Peas, or Tomatos are intended to be grown. The species that are the richer in potash are those from deep water, notably the several varieties of Laminaria—the streamer-like and the palm leaf "colleys," collected chiefly on the western shores of Jersey, and which is cast up in large quantities after storms. Of the cut weeds, Fucus serratus, or flat vraic, brought in by the boats is best; next in quality is the twin bladder vraic—Fucus vesiculosus—and lastly, the knobbed vraic, or sea whistles—Fucus nodosus—found growing near to the shore, but which contains scarcely more than one-half of the valuable ingredients found in the other two species. It may be mentioned incidentally that there is far more iodine in "colley" than in shore weeds. The amount of iodine in the different varieties of Laminaria ranges from 4 to 5 lbs. per ton; the amount of bromine is about one-tenth the iodine.

The great defect of Sea-weed as a manure is the immense amount of water it contains (70 to 80 per cent. of its weight). This renders cartage expensive. Dry weed which has been carefully harvested is three or four times as valuable as the fresh weed. If, however, it has been washed by rain when drying, some of its most valuable constituents are sure to have been lost. For cold and heavy land, or for land which has become sour or acid from want of lime, vraic ash is better than the fresh weed, but as a general rule it seems undesirable to burn vraic, as thereby the nitrogenous substance in it which is valuable, and by no means inconsiderable, is lost.

The growth of Sea-weed is found to be twice as luxuriant in summer as in winter, and analysis indicates that the weed cut in the autumn is less valuable in composition than that cut earlier in the year. *J. J. Willis.*

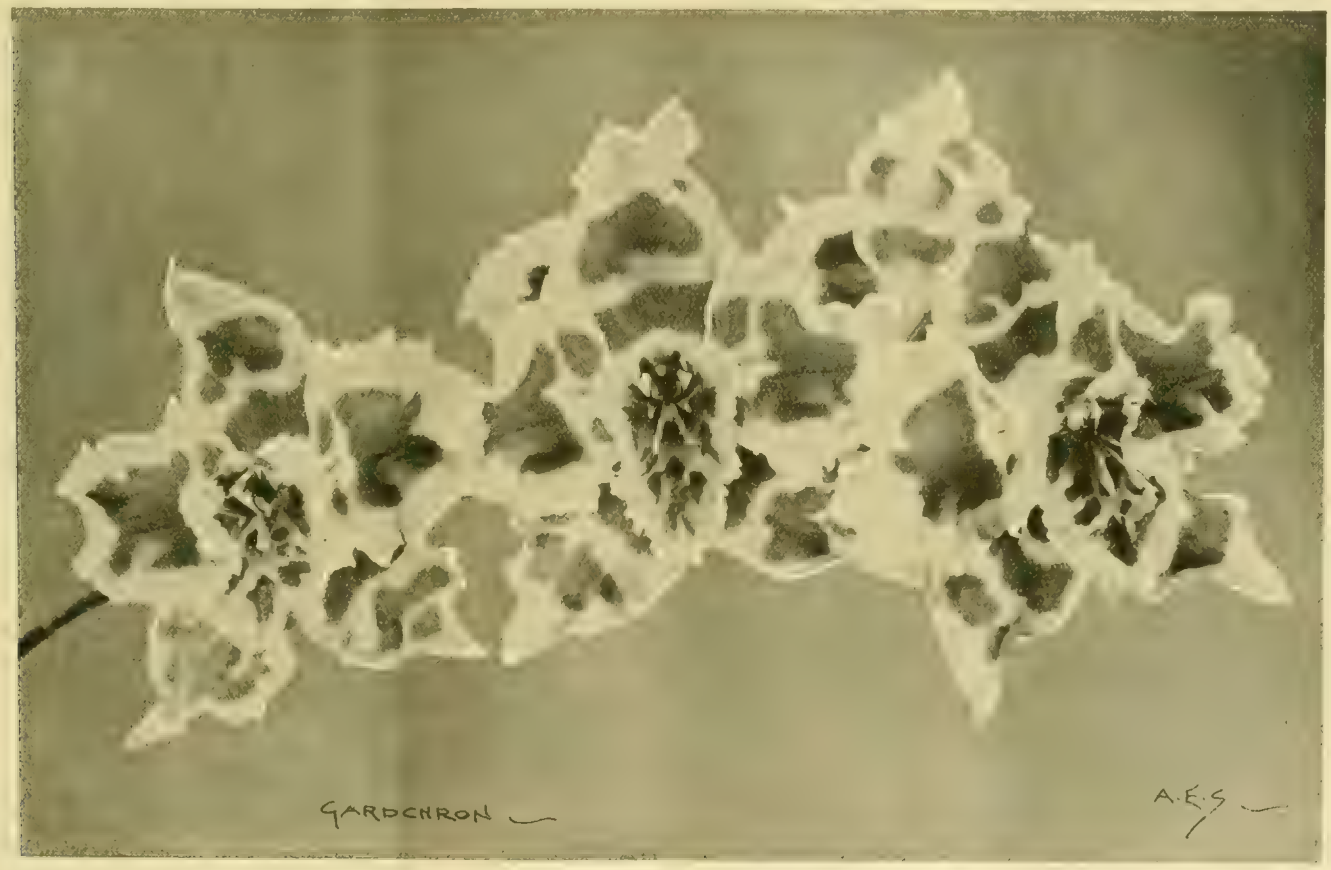


FIG. 126. ODONTOGLOSSUM CRISPUM "QUEEN OF THE EARTH."

ODONTOGLOSSUM CRISPUM "QUEEN OF THE EARTH."

Our illustration (fig. 126) represents the beautiful Odontoglossum, bearing the above name, in the collection of de Bary Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables). It first appeared in the sale-rooms of Messrs. Protheroe and Morris, March 23 last, M. Chas. Vuylsteke being then the owner. At the time the question was raised as to whether it was not a reversion from O. × ardentissimum towards its parent O. crispum. In any case it is a most beautiful flower, with the rich rose-purple markings of O. × ardentissimum but with the lip of O. crispum, and its fine qualities as a showy Odontoglossum are unquestionable.

FREESIAS FROM SEED.

Not so many years ago the Freesia was a comparatively uncommon flower, and certainly not appreciated at its full value, either as a pot plant or as one of the best for cutting purposes. Within more recent times Freesia bulbs have become a good deal cheaper than they were, and as a natural result the flower is now more commonly seen, although probably only a very small percentage of those blooms which we see in the florists' windows were grown within the United Kingdom. However that may be, it is still evident that there are many who do not yet realise the possibilities of this most charming Cape flower, which, as a matter of fact, is by no means difficult to grow, even in the most humble establishment.

The average Freesia blooms that one sees in the shops or in the small greenhouse of the amateur are by no means perfect examples of the flower, and the chief fault of the grower seems to be found in the fact that the Freesia is too often coddled to an extent which it dislikes exceedingly, with the result that the plants grow weakly, requiring support both for the blooms and leaves to prevent them from collapsing over the edges of the pot. The Freesia when properly grown requires no support whatever, either for its leaves or blooms, and both of them should stand up as firmly and erect as the leaf or flower stems of the Gladiolus or the common purple "flag."

It is the usual custom to pot four or five Freesia bulbs in a 6-inch pot, in July or August, letting the pots stand outside until frost threatens, when they are removed into a gentle heat. The ordinary treatment of Freesia bulbs potted in the summer is generally known, and it is not necessary here to say anything beyond making mention of the fact that the plants should be kept in a moderate temperature of 55° to 65° Fahr. throughout, and be placed as near the glass as possible. They will then bloom about the end of November or early in December, and will last fairly well if well watered and kept a little cooler when in bloom.

But those who wish to have Freesias at their best over a long period will grow them from seed. There is only one drawback to the process, this being that it is impossible to get the flowers true to type. That, however, is really a slight drawback and of no importance except to those who desire pure white blooms only. Those splashed with yellow are quite as handsome and as fragrant. The seed may be sown at any time from March onwards, five or six seeds to a 6-inch pot, the soil consisting of a good fibrous loam with a plentiful admixture of sand and leaf mould, with a little well-decayed manure added. The seeds should be sown about an inch deep in rather fine soil and covered up firmly, afterwards being placed on a shelf near the glass and shaded from bright sun. Freesias are slow in germinating, and are often six weeks in coming up. In the early stages they must not be hurried, and watering at all times must be carefully attended to. As soon as they are an inch or so high the young plants may be removed to a cool frame to harden off, and thence they will go into the open for the summer, standing in an airy, but shady, place until frost comes in the autumn, when they should be taken into gentle heat. When the buds appear, weak liquid manure may be given, but "artificial" is not recommended. Thus treated, the Freesias should provide a profusion of bloom, which, with successive batches a fortnight apart, will make the greenhouse gay from October to March. The following spring seed may be sown again, if desired, but the grower will have a good supply of large bulbs by him as the result of the previous year's sowing. Freesia blooms last so well as a pot plant or in water that everyone with gentle heat in a small greenhouse should try growing a few from seed. *East Sussex.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Phalænopsis.—Plants of the different varieties of Phalænopsis, mentioned in my Calendar for February 17, and others such as P. Rimestadtiana, P. Luddemanniana, P. Esmeralda, P. speciosa, P. rosea, P. fasciata, P. Sanderiana, P. Stuartiana, and the almost deciduous P. Lowii are now commencing to make leaf growth, whilst new roots are beginning to push out from the base of the growths, and many of the old roots to start afresh. All these plants should now be examined to ascertain if they require more rooting space or if the sphagnum-moss has decayed, rendering fresh moss necessary. Phalænopsis may be cultivated in almost any kind of receptacle, and as regards potting material they do not appear to be particular whether it be peat, sphagnum-moss, or leaf soil, with small crocks intermixed with either. The plants will thrive equally well in a mixture of these ingredients. The principal requirements of Phalænopsis during their growing season are heat, moisture, air, shade, and an evenly balanced atmospheric temperature. Whenever it is thought necessary to give the plants more rooting space, great care should be taken not to injure the old roots by detaching them from what they may be clinging to, the points of the roots being especially susceptible of injury. Several years ago some of the Phalænopsis at Burford, which were thoroughly well rooted in Teak wood baskets, required more rooting space; this we afforded, first by carefully removing all the old potting material, and then by placing the baskets into larger ones, filling the space with crocks, and putting on the surface a thin layer of clean picked sphagnum-moss. By this plan no roots were injured, nor did the plants receive any check; some of them have now from a dozen to twenty fine healthy leaves, and this season have produced from 50 to 80 flowers on each spike. I find that Phalænopsis will produce healthy foliage if planted in pots or shallow pans in a mixture consisting of three parts of leaf soil, the other part being peat, sphagnum-moss, and small crocks. Potted in this mixture the plants send up fairly good spikes, but the flowers generally are deficient in size and substance, and the leaves, being unable to bear the strain of flowering, quickly shrivel and become soft to the touch. After attending to their immediate requirements, place the plants on the shady side of the East Indian house or in a similar position in the warm, humid atmosphere of the plant stove. Keep the surface moss in a growing condition by slightly sprinkling it with the fine sprayer or a fine rose watering can whenever it appears to be getting dry, but when the roots are seen creeping about and the new leaf growth is advancing satisfactorily, a more abundant supply of water is necessary. Not so much is required immediately around the collar of the plant as around the receptacle it is in. Plants of P. Sumatrana, P. violacea, and others that are sending up spikes need not be disturbed until the flowers have been cut. Thrips are exceedingly fond of the succulent leaves, and if not eradicated will quickly disfigure them. Whether these insects be present or not, careful and periodical spongings of the leaves with tepid soft water are advisable.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

The Fernery.—As most Ferns are now in active growth, an adequate amount of moisture must be supplied to their roots, and a humid atmosphere maintained about them. The fronds, when in a soft growing state, exhale a considerable amount of water, hence they are liable to suffer in a dry atmosphere, and, further, a dry condition favours the increase of thrips, the worst insect pest the Fern cultivator has to contend with. Proper shading must be afforded, for if the plants are unduly exposed to bright sunshine for any considerable length of time, disastrous results will follow. A subdued light is suitable to most kinds of Ferns, but the following varieties should be fairly exposed to sunshine in order to obtain highly coloured tints in their foliage:—Adiantum Farleyense, A. gracillimum, A. tinctum, and A. rubellum. Plants growing in baskets will need frequent watering, and if hung in positions where the fronds will become drawn to one side, the baskets should be turned weekly. In most Ferneries are large quantities of young self-sown seedlings; these will prove very useful if they are potted in small pots and grown in a mixture consisting of three parts fine peat, siftings of crocks, and sand. A rearrangement of the inmates of the Fernery sometimes becomes necessary in order to prevent overcrowding, a condition which often results in damping, and consequent disfigurement of the plants. Keep a sharp look out for slugs, as they are most destructive pests. Late evening is the best time to trap them, for they usually come then to feed on the young fronds.

Gerbera Jamesoni, or Barberton Daisy, as it is called in Natal, of which country it is a native, is a handsome flowering plant, but little grown in gardens. It is of value for providing cut flowers for dinner-table decoration, the intensely rich orange-scarlet colour of the flowers, combined with stems 10 inches to a foot in length, rendering it most suitable for the purpose. If placed in a light position, close to the glass, in a warm greenhouse, and frequent applications of weak liquid manure afforded, the plants will develop strong crowns, from the centres of which the flowers are produced in profusion. The rich colour of the flowers becomes intensified when the plants are grown in a somewhat dry atmosphere and in full sunshine. A compost suitable to its requirements is one-half rough peat, together with loam, dried cow manure, and a free mixture of Oporto gravel or sand. The gravel contains a large percentage of flint pebbles, which are common in the soil of its native habitat.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Spring Bedding.—Last week's notes dealt with the advisability of preparing for next year's spring bedding by propagating Aubrietia and Arabis by means of cuttings as soon as possible. The same is applicable to Alyssum saxatile. Unfortunately this plant, which makes such a brilliant show of rich golden colour throughout April and May, is not so easily increased as either of the former mentioned plants. The growth is semi-woody and takes some time to root, while also there is more difficulty in obtaining the suitable growth for cuttings from the old plants. But it is such a valuable spring bedder that it is worth taking pains and time to work up a sufficient stock to use it in masses. It grows well in any soil, if it is light and open and free from shade. Iberis sempervirens, the hardy evergreen white flowering Candytuft, is another useful spring bedder that should be propagated now by cuttings. It commences to bloom early in March and lasts into May, and when planted in masses forms an admirable sheet of white. For associating with the plants already referred to, there are few early flowers more effective than some of the distinct coloured varieties of the tufted Pansy (Bedding Viola). For ordinary summer display, the best time to propagate is in autumn, but for spring bedding purposes the cuttings should be taken off any time now, and dibbled into a prepared bed of soil in a shallow frame. When the cuttings have made roots the lights should be removed entirely. By October they will have developed into sturdy plants fit for planting out into the beds. These beds ought to be well-manured beforehand, as the Pansy requires a rich and heavy soil. The Polyanthus is another invaluable spring bedder, particularly the rich yellow coloured ones. The red coloured varieties, or Fancy Polyanthus, are not so well adapted for the purpose, for to enjoy their beauty they need to be viewed rather closely, while a mass of deep yellow Polyanthus is effective even when seen from a distance. They are easily propagated by division at the present time, and thus planted in nursery rows. They grow well in almost any garden soil, but prefer one that is rich and moist, and a position in partial shade. Treated thus they form strong flowering-plants for planting out in October. When planting them in October care should be taken to plant thickly, as niggardly planting would result in their producing only a very poor effect. The Polyanthus can also be easily raised by sowing seeds in the present month. The Garden Daisies (Bellis perennis hortensis) in their effective red, pink and white colours are so attractive that they must not be omitted from any scheme of spring bedding. Their propagation is of the simplest, and should be undertaken during the next week or so. It is only necessary to pull the old plants to pieces, and dibble them firmly into well-dug ground in the nursery, planting them in rows 6 inches apart. In October they can be lifted and planted into their flowering-beds. The Daisy comes very true from seed, so anyone not possessing stock can readily obtain sufficient plants for next year's bedding by sowing at once, either in boxes in a frame, or on a prepared border in a sheltered, shady position out-of-doors. When the seedlings are large enough, transplant them into nursery rows, 3 inches apart, where they may remain until the beds are ready for their reception in October.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Pines.—The first batch of "Queens" that have passed their flowering period, and have commenced swelling their fruits, will need to be liberally supplied with tepid water at the roots about every third or fourth day. Plants on which the fruit has nearly grown to its full size, and already shows signs of colouring will not need such a liberal supply, and it may be further restricted as the fruit approaches a condition of maturity. If water were afforded liberally until the fruit ripened, the flavour which English-grown Pineapples possess when properly cultivated would be wanting. It is sometimes necessary to keep Pines, when ripe, for use on some particular occasion, and when this is the case they should be placed in the fruit room, in the pots as they have been growing. They will keep for a week or more in this way without losing flavour, or shrivelling, but must not be given any water at their roots. Plants that are growing freely require much atmospheric moisture, and the temperature at night should be kept at 75°, allowing a rise of 10° to 15° during the day. Rather less artificial heat than formerly will now be wanted to keep the atmosphere of the house or pits at its proper temperature. Close the houses early in the afternoons, and spray the plants lightly overhead with the syringe. If the plants were syringed too heavily, it would cause the crowns to grow too fast, and hinder the development of the fruit. Weak doses of liquid manure and Peruvian guano may be given alternately once or twice each week to such plants as possess plenty of roots, also a little soot water occasionally.

Successional Plants that were placed in their final pots two months ago will now be making good progress both in roots and foliage. Great care is necessary in affording water, it being very important to prevent the soil from becoming sour. If the plants can be grown successfully without shading, so much the better, but when they have been freshly potted or planted out, the plants require a little shade from hot sunshine for a few days. Commence to take off suckers, and pot them in 6-inch pots, in turfy loam with a little sand and wood ashes mixed together. Plunge the pots in good bottom heat, and lightly syringe the plants each day, keeping them in a rather close atmosphere until they have made roots. The plants will not require much water at their roots beyond what they will get from the syringe, until they have filled the pots with roots.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Peach Blister (*Exoascus deformans*).—This disease is found early in the season when the temperature is cold at night. The leaves suddenly become thick, fleshy, and distorted, and even the young shoots sometimes become enlarged and twisted, and are often completely spoilt, for the disease often results in a small tuft of stunted growth being formed at the ends of the branches. The best remedy when the shoots are affected is to cut them away and burn them, for it is said that once a branch becomes affected the fungus continues to grow in the tissues, and, later, passes into the leaf buds. In the case of diseased leaves they should all be hand-picked and burned. I do not think the disease is transmitted from year to year, for all the trees do not fall a prey to it, nor are the same trees attacked in successive seasons. The intensity of the disease depends almost entirely upon the prevailing climatic conditions. If the weather is genial and the plants' growth is unchecked until the leaves are developed, blister and curl are practically absent, whereas if cold winds and severe weather sets in the disease at once appears, and it is especially prevalent when warm days and cold nights obtain. As a cure, or partial preventive, the trees should be sprayed with some fungicide. A suitable dressing is made of 10 lbs. of sulphate of copper, 5 lbs. of lime, and 50 gallons of water. The sulphate should be dissolved in a vessel of cold water, and the lime should be slaked in another, after which the water should be added. The vessel used for mixing the sulphate of copper must not be used for culinary purpose as the sulphate is poisonous. An earthenware or wooden receptacle should be used, as the liquid corrodes metals. Some varieties of Peaches and Nectarines take the disease much more readily than others. A tree of Lord Napier Nectarine was the first I noticed attacked, and this variety is affected more or less every year. Royal George, Early Silver, Hales, and Bellegarde are other varieties liable to an attack, whereas Sea Eagle is almost immune.

Spraying.—The spraying engine should be kept at work to combat aphides and red spider, for if the trees are kept clear of these pests during the early stages of their growth they will, with the advent of warmer weather, grow sufficiently vigorous to more or less repel their attacks, and they can at this later stage be easily kept clean.

Watering.—See that trees planted against south walls are not suffering from a lack of moisture. When watering give a thorough soaking for several feet around the base of the trees. Many sickly trees do not obtain a sufficient supply of water at this season.

Pears, Cherries and Apricots.—Examine the trees for the presence of sawflies, for their repulsive-looking larvæ are most destructive to the foliage of these trees. They are found both on the upper and on the lower side of the leaves, and should be destroyed with the finger and thumb. This slug-worm, as it is sometimes called, eats away the upper surface of the leaves and soon makes the trees appear unsightly in addition to causing the fruits to drop from insufficient assimilatory and transpiring surface. If measures are taken in the autumn and winter the pupæ can be more or less destroyed at the roots of the trees. A good spraying with Richard's XL-All wash will help to clear the foliage of the pests, after which the trees should be gone over carefully and the remaining larvæ or caterpillars destroyed. The majority of Apple and Pear trees are blooming remarkably well; and with favourable weather we may reasonably expect a fine show of fruit. Barnack Beauty and Norfolk Dumpling Apples have very dark pink flowers that are extremely pretty, the trees being conspicuous objects among a hundred or more varieties.

General work.—Disbudding should now be carried out in earnest. Mulch all fruit trees and keep the surface of the soil about them clean, and free from weeds and suckers. Attend to the watering of all fruit trees that may require it. Make grafts secure by tying (as recommended in a previous Calendar) in order to protect them from the wind. Keep nursery quarters clean. Train and disbud young stocks, cutting, &c.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Tomatos in Frames.—In gardens where glass-houses are scarce, good crops of these fruits can always be obtained providing a few frames can be spared for the purpose. Prepare narrow boxes 12 inches wide and the same in depth and fill them with two parts good turfy loam, one half each of wood ashes and horse droppings. Press the soil firmly about the plants, place in frames and keep the structure close and shaded for a day or two, when the plants will soon make good headway and later give an abundance of fruit. Train the plants to a single stem. A stake should be fixed by each plant to enable them to be trained so that the foliage does not come in too close contact with the glass.

Spring Cabbages.—If the ground is not otherwise required, the roots should be left in the ground after the heads are cut. The stems, in due course, will form numerous sprouts, which, to my mind, are much more tender in eating than the original heads. It is astonishing how useful these are, and often, too, at a time when there is a scarcity of this vegetable, which is often the case in early winter.

Potatos.—Old tubers stored in pits or clamps should be looked over and have their young growths rubbed away, otherwise their edible and cooking qualities will soon be lost. Keep the tubers as cool as is possible and free from the light. If a succession of new Potatos is required, select good tubers for seed purposes and plant a few at intervals of a fortnight during the next three months. It is surprising how these old tubers will, without top growth and after they have been rested and had their sprouts rigidly rubbed off, produce a quantity of young ones.

Rhubarb.—Plants intended for forcing next winter should not have their leaves pulled severely in order to allow the crowns to become as strong as is possible. If the clumps are at all weak give them a good dressing of dung or liquid manure. Newly planted stools should receive a top dressing of some suitable material to encourage growth, which will never make rapid progress unless it be early in the season.

Thinning Carrots.—This work should be performed early, and before the plants have become too strong and have their roots entwined together. Draw a small quantity of soil near each plant to prevent injury from wind, for if the Carrots are twisted good straight roots cannot be expected. Loosen the soil deeply between the lines with the hoe. The above remarks apply also to seedling Parsnips, Beetroot, &c., for nothing is more detrimental to the growth of root crops than neglect at the thinning periods. A dressing of soot at the time of thinning is an excellent procedure, for it falls into the openings made round the roots, thus preventing insects taking advantage of the exposure of the roots.

Leeks.—The remaining portion of the main crop of this vegetable should at once be lifted to check further growth and the development of seed stems which are formed at this season. Lay them behind a shady wall where it is cool, to be used as required. Good Leeks are very useful at this season of the year. The space they have occupied can be made use of for planting Celery, and if the ridges be immediately thrown up the ground will look tidy and in order. Leeks sown early in the present year and left over from the first planting should be planted to form part of a main crop and treated accordingly.

THE APIARY.

By Chloris.

Uniting: Why it is done.—It is often found in the spring that a stock has dwindled and become very weak, and in some cases the queen is missing, owing, perhaps, to careless manipulation. If the colony has a queen, to keep such an one through the summer would produce no surplus honey, because the queen only lays as many eggs as can be kept warm by the occupants of the hive. In this case the increase would be progressing so slowly that the summer would have passed before the colony could be termed a strong one. Having decided which colonies are to be united, move one hive towards the other at the rate of two or three feet a day. If the one hive is queenless, when they are quite close together, the queenless bees will unite of their own free will with the others headed by a queen. If both stocks have queens, retain the better one, and cage the other in case the former be killed. Choose a day when the bees are not flying in consequence of wet or cold winds, and place the combs with their adhering bees alternately into one hive, taking care that all brood is in the centre. Before handling either stock, take care to give each a puff of smoke, and let them have every opportunity to gorge themselves with honey before removing the quilts.

Robbing.—During the spring, when the stores are low in the hives and feeding artificially is in full swing, robbing is often commenced and, if not checked at once, it becomes well-nigh impossible to cure it. When bees are seen struggling on the alighting board, or falling off by threes and fours, you may be certain that the plague has commenced. The passion, for such it is, will grow rapidly, and every bee that gets off scot free will soon return following an increasing number of raiders.

The Cure.—They say prevention is better than cure. When feeding on syrup take care to spill none about the hives; feed at night or on wet days, and close all entrances, so that one bee only can pass at a time. When the entrances are closed in this manner, the colony attacked can fight the intruders with better hope of success than when many bees can pass in.

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	May 22	Devon County Agricultural Show at Tavistock (2 days).
THURSDAY,	May 24	Anniversary meeting of the Linnean Society.
SATURDAY,	May 26	Dutch Gardeners' Society meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—56·2°

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, May* 16 (6 P.M.): Max. 55°; Min. 44°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 17 (10 A.M.): Bar., 29.6; Temp., 48°, *Weather*—Dull.

PROVINCES.—*Wednesday, May* 16 (6 P.M.): Max. 51° South-west England; Min. 40° North-east Scotland.

SALES.

WEDNESDAY—

Geraniums, Palms, Plants, Begonias, Gladiolus, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY—

Imported and Established Orchids from various sources, Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Orphan Fund. We are glad to be able to record such a successful festival as that which took place on May 10 in aid of the Royal Gardeners' Orphan Fund. The dinner was well attended, and it was announced that a sum of £1,001 15s. had been paid or promised for the fund. This is a larger amount than has been obtained at any former festival since the institution was established in 1887, and it would appear, therefore, on the surface, that there is no need for any grumbling.

But the festival is only one event—admittedly the principal one—in the year's work, and, whilst the receipts from this source are eminently satisfactory, and such as amply compensate for the great amount of work undertaken by numerous helpers, as well as by the committee and secretary, the receipts from annual subscriptions have always been very much less in amount than they should be.

It was announced on May 10 that there were twenty-one candidates awaiting election! When will gardeners wake up, realise the position, and act up to their responsibilities? We do not believe that the omission is owing to any lack of charitable feeling, but rather to thoughtlessness or ignorance of the circumstances. We frequently meet horticulturists who are still of the belief that the committee is in a position to elect all candidates that apply for help. Such an impression has been created, we suppose, because for some years the fund was able to meet all the claims for support which were received at that time. Since then, however, the institution has become better known, and the needs of gardeners' orphans are therefore more generally brought to the knowledge of the committee.

The sooner gardeners can be convinced of the need for further contributions the better it will be, and when they themselves have become subscribers they will be in a better position to approach their employers to ask them to afford additional assistance to the fund.

Mr. Edward Sherwood, the honorary treasurer, it will be seen from the report on another page, introduced a very simple sum to show that the annual subscription of five shillings would impose little more upon the donor than an expenditure of one penny each week! Every gardener and every nurseryman in the British Isles could afford to subscribe such an amount. Could they but be induced to do so no gardener's orphan would then be refused aid.

Mr. Gurney Fowler is to be congratulated upon the amount raised in connection with the festival, and those who have the interests of the charity at heart will be very grateful indeed to him for his help on that occasion. But at the risk of wearying our readers, we again beg them to help to place the committee in such a position that it will be less dependent upon the money obtained from the festivals, and may rely more and more upon an increased and increasing list of annual subscriptions.

All who know Mr. H. B. May, the genial chairman of the Executive Committee, will feel the deepest sympathy with him in the bereavement he sustained early on Tuesday morning last in the sudden and unexpected death of his wife, a lady who was held in great esteem.

SMALL HOLDINGS.—The Departmental Committee appointed by the President of the Board of Agriculture and Fisheries to inquire into the subject of small holdings held a sitting on the 10th inst. Evidence was given by Mr. A. E. BROOKE-HUNT, a Superintending Inspector, Board of Agriculture and Fisheries; Mr. T. S. DYMOND, an Inspector, Board of Education, and Dr. H. FRANKLIN PARSONS, the Assistant Medical Officer of Health, Local Government Board.

LINNEAN SOCIETY.—The anniversary meeting of the Linnean Society of London will be held at Burlington House, Piccadilly, on Thursday, the 24th of this month, at 3 o'clock precisely, for the election of a council and officers for the ensuing year, for the award of the society's gold medal, for the reception of the presidential address, and for other business.

No. 4 GREENHOUSE AT KEW.—In a greenhouse of any pretensions it is interesting to observe how at some seasons of the year one colour or certain shades of one colour predominate. At the present time shades of red are the most conspicuous in this house. These are furnished principally by Nicotiana Sanderae, plants in 12-inch pots, 6 to 8 feet in height; Rhododendron (Azalea) indicum varieties, hybrid Senecios (Cinerarias), Salvia splendens, and Begonias. Annuals are excellent subjects for the decoration of the cool greenhouse in spring, and are easy to grow. Besides the now deservedly popular Schizanthus, the pink and white varieties of Helipterum call for attention. SUTTON's form of Nemesia strumosa can be had in full flower three months from the time of sowing the seeds. Collinsia bicolor in 7-inch pots are a mass of flower. An early white Sweet Pea "Mont Blanc" flowers when about 3 feet high. A great variety of interesting Senecios (Cinerarias) are just now at their best. These include S. kewensis (cruenta × garden variety), S. Lynchii (multiflora × garden variety), S. Lady Thiselton-Dyer (Heritiéri × Kew Blue), S. cantabridgensis, S. Moorei, and S. Feltham Bouquet. The new hybrid Calceolarias, Jefferies' Hybrid and C. kewensis ×, give promise of becoming valuable subjects for greenhouse decoration. Hard-wooded plants with but few exceptions, although lasting in flower over a long period, find little favour in the gardens of to-day. Take Darwinia Hookeriana as an instance. From a decorative point of view its value lies in the large coloured involucres. These last four to five months, the small flowers are enclosed several together within the bracts. Another plant is Helichrysum (Aphelexis) humilis var. purpurea. The much-branched stems and silvery-green leaves set off to perfection the purple flower-heads. Oxylobium ellipticum is flowering profusely. The yellow flowers are crowded on corymbose racemes. So far Boronia fastigiata has found little favour in gardens, although as a decorative plant it is more effective than several of the more generally grown species, and quite as easy to cultivate. A number of plants of Polygala myrtifolia var. grandiflora are covered with flowers. The white-flowered Hymenocallis (Ismene) calathina is very fragrant. Calceolaria violacea is covered with pale violet helmet-shaped flowers. Lilium sutchuenense, a recently reintroduced Chinese species, resembles L. tigrinum, the flowers and leaves being rather smaller. Primula Forbesii does best treated as an annual; grown several plants together in pans (dwarf pots), the pale lilac flowers are freely produced. Two large specimen plants of Impatiens Oliveri, in tubs, have been one of the features of this house during the past two years, as already noted in these columns.

FLOWERS IN SEASON.—Mr. JAMES HARRIS, Blackpill Nurseries, Swansea, sends a selection of excellent St. Brigid Anemones, of scarlet colour, of which he writes: "They have been grown in ordinary garden soil, with the addition of stable manure. The seeds were sown last June in a cold frame, and the seedlings transplanted in September to the site where they are now flowering. We have some two year old plants with 50 or more flowers on them, the flower-stems being about 18 inches long. They are valuable subjects for furnishing flowers for cutting or for the decoration of the garden, as they are fully two months in flower. I have been selecting this—what I term 'Giant' strain—for several years."

IN MY GARDEN.—This is described as being "a little summer book for nature lovers," and is certainly daintily got up so as to please the most fastidious. There is a space for memoranda for each week of the year, with appropriate and not too familiar quotations set opposite to it. Cultural hints and suggestions for table decorations are also included. The whole is prettily bound and printed, all in lavender, and issued from The Lavender Press, Sheep Street, Wellingborough.

GARDENING INSTRUCTION IN WORCESTERSHIRE.—A course of Saturday lectures to teachers (with practical demonstrations) has been concluded at the County Experimental Garden, Droitwich, by Mr. J. UDALE, County Instructor. The subjects were as follow:—Preparation of soil and planting fruit trees; winter pruning: large fruits and small fruits; seed sowing: Brassica, Asparagus, Peas, Beans, Carrots, Beet, flowers; thinning crops and general cultivation. These lectures have been well attended and much appreciated.

Recreation Club for Nursery Employees.—Messrs. Sutton & Sons, Reading, have devoted a large portion of the grounds and land, formerly belonging to Cintra Lodge, as a recreation ground for their employees. Efficient groundsmen have been at work for many weeks past, and the turf is already in very fine condition. Cricket, football, and hockey matches are being arranged for the summer and autumn months, together with lawn tennis tournaments. The cycling section and the anglers are also being catered for. Mr. Martin John Sutton is the first president of the Club.

Devices to Protect Fruit Trees from Frost.—Mr. Bennett, British Consul-General in San Francisco, in the course of a recent report to the Foreign Office, states that the burning of oil in metal pots to protect fruit trees from the effects of frost has been practically abandoned in California on the ground that the smoke is so dirty that it ruins the fruit by the deposit of the oily smuts. Fires of brush and refuse lighted to windward are sometimes resorted to, but a better substitute is the burning of sawdust in specially constructed holed tins, which are conveyed through the orchard on a wagon. The resulting smoke is very thick, and in order to avoid too rapid combustion it is necessary to use a small spray pump on the wagon to counteract the tendency to flame. Another plan, which is expensive but successful, is a combination of smudge and water. The trees are covered with burlap, removable of course, mounted on iron posts, with wire about 16 feet in the centre and sloping to 8 feet at the sides. Small irrigation canals are run in parallel lines under the burlap the full length of the orchard. These are filled with water at a temperature of 65°, pumped from a well at a rate of 3,000 gallons an hour. The water then runs to waste, and on issuing at the further end of the orchard has lost about 10° of heat. At the same time "smudges" are lighted at each end of the orchard, and the suction of air under the awning draws in the smoke and creates an excellent smudge.

Exhibition at Mannheim.—It is proposed to hold a grand International Horticultural Exhibition at Mannheim from the beginning of May to the end of October, 1907, in celebration of the 300th anniversary of the foundation of the city. The exhibition is under the patronage of His Imperial Highness the Grand Duke Frederick of Baden, and the committee includes the most influential horticulturists of the district. Every branch of horticulture is to be represented in the general exhibition, and in addition there will be special shows devoted to Roses, Orchids, Cacti, Dahlias, and to other flowers, fruit and vegetables, according to the season. All particulars can be obtained by application to the office of the *Jubilaümsausstellung*, Friedrichsplatz, 14, Mannheim.

The recent Eruption of Vesuvius.—The destruction of vegetation in the area bordering on the volcano has been very great, and that which was not utterly destroyed by the fall of heated ashes was swept away by an enormously heavy rainfall. Fortunately the formation of rain-clouds in consequence of the sudden rise in the temperature in the higher regions of the air due to the eruption extended over a relatively small extent of country only, but the more distant parts around the mountain, owing to the sudden changes in the direction of the wind, were more or less covered with dry coal ashes, as also the city of Naples They began, writes M. Herb, in *Moller's Deutsche Gärtner Zeitung* of April 28, the Sisyphus labour of clearing several times daily, the deposit of ashes from drooping branches and foliage of the large plants in gardens and nursery grounds, and subsequently from the germinating crops, and from the hotbeds. At the time of writing the volcanic action was beginning to lessen, and there were hopes that the better sorts of sowings, viz, Balsams, Zinnias, Stocks, Asters, Heliotropes, Centaureas, Begonias, Coleus, and Salvia splendens might still be saved. Of the vegetables sown, luckily nothing had come through the soil, and Tomatos, Capsicums, and Egg-plants were still under sufficient cover. The plants that have suffered the most are Peas, Beans, and Radishes. Broad Beans, which were in bloom at the time, are broken down with the weight of the ashes, whilst Endive, Chicory, Spinach and the like intended for the market had the life literally pressed out of them, and it is to be feared that a similar fate has befallen the breadths of Myosotis, Bellis, Pansy, Wallflower, and winter-flowering Stocks, which had been in bloom for three weeks. Bulbs, of which the various species and varieties had finished their flowering, will in most instances raise their leaves from out of the coating of ashes without suffering much injury. The greatest losers will be the raisers of the Cauliflower seed. Vineyards and orchards have suffered greatly.

A Pocket Book of British Birds, by E. F. M. Elms.—A handy little book published by West, Newman & Co., 54, Hatton Garden, and which is intended to aid the field naturalist in naming the birds he sees. Each species is carefully described; its plumage, language, habits, food, nest, and eggs; and additional observations are added for the identification of species superficially resembling one another. The author has confessedly drawn information from some of our large standard books, and has added helpful remarks of his own. We hope it may enable readers to recognise birds without shooting them or taking their nests. It is, at any rate, drawn up carefully with this end in view, and should find favour for these very reasons.

Hand List of Ferns, etc.—From the Royal Gardens, Kew, has been issued the second edition of this very useful list. The original preface is retained and a second one from the pen of the new Director added. The revision of the list has been entrusted to Mr. C. H. Wright. There is an appendix of "cultural forms" of British Ferns, many of which, if we mistake not, were not of garden origin, but may be considered as "mutations." When Mr. Christensen's admirable *Index Filicum*, now in course of publication, is completed, doubtless further revision will be required. The percentage of Ferns in the various countries of the globe varies from 4 per cent. in the Arctic zone to 46·4 in tropical America; but such estimates can only be approximate, as the figures given will always vary according to the judgment of individual botanists as to the identification and limitation of particular "species."

Meconopsis integrifolia.—When Messrs. James Veitch & Sons introduced this noble Poppy into cultivation in this country, it will be remembered that in Messrs. Bee's nursery a similar plant flowered simultaneously [see *Gardeners' Chronicle*, Sept. 17, 1904, p. 194], and there was some doubt expressed at the time as to whether there were two species or only one. A plant is now in flower in the rock garden at Kew, which is like Messrs. Bee's plant, and is, we believe, considered by Col. Prain, the Director of Kew, as a distinct species. As Col. Prain is an authority on this genus his description will be looked forward to with interest. It will be remembered that Col. Prain was obliging enough to furnish us with a note on the genus in our issue for June 17, 1905, p. 369.

Cystopteris montana.—Mr. Druery, having submitted the curious growths on this plant (see *ante*, p. 229, fig. 91) to Professor Farmer, of the Royal College of Science, has received from him the following communication:—"As regards the interesting plant of Cystopteris montana, there is no doubt of the remarkable case of the development on the plant of a very curious tuft of evergreen leaves that differ much from the nominal leaves of the plant, and that these, when examined, consist of a midrib and a lamina of single cell thickness. The nature of the frond is yet to be determined, *e.g.*, whether or not it is [a case of] incipient apospory, but there is no doubt as to the production of young plants on layering these curious fronds after detaching them from the plant. On one of them the striking cell growth on the surface strongly suggested apospory. I have never seen anything like it before, and I am sending you two slides containing (1) a bit of the normal frond produced by the plant, (2) a bit of one of these remarkable "frondlets" in which you will easily see the difference in character. But all one can say at present is that the "frondlets" are very hygrophilous in form, and present great differences as contrasted with the normal fronds. I think you are to be congratulated on a most interesting discovery. *J. B. Farmer, Royal College of Science, London, May 8, 1906.*"

Publications Received.—*Bulletin of Miscellaneous Information, Trinidad.* April Contents: How to pack and forward specimens for examination; destruction of mosquito larvæ by Utricularia, &c.—*Agricultural Bulletin of the Straits.* January. Exporting seed of Para Rubber, by H. N. Ridley, Director of Public Gardens; the Engkald fruit (Litsea persella n. sp.), reports and registers, &c.—North Dakota Agricultural College. Department of Botany. Bulletin No. 68. *Rust Problems.* Henry L. Booley and F. J. Pritchard.

THE GENUS ARCTOTIS AT KEW.

(See Supplementary Illustration.)

The nomenclature of the species of the genus is very mixed. A number of them have been described under two, three, or even four names. Take A. aureola as an instance: this has at various times borne the names of A. aspera var. aureola, A. grandiflora, and A. undulata. In the *Index Kewensis* 50 distinct species are recorded. Very few of these are to be met with in gardens, but only four species and one variety are in cultivation at Kew. Three species and a variety were recently flowering in No. 4 greenhouse. A large number of species appear to have been introduced at various times, but apparently their cultural requirements were not sufficiently understood, and they were soon lost.

The species are variable in habit, some being annuals, others herbaceous, and those with which these notes are more directly concerned are more or less shrubby. Several are old garden plants. A. aspera var. arborescens was in cultivation at the beginning of the 18th century in this country, and earlier than that in Holland.

Propagation is effected by seeds, cuttings, and occasionally by grafting. The method practised varies according to the species. The frutescent species, with one exception noted later, require special care to root them successfully. Select short, sturdy cuttings, with a heel of old wood attached, such as are often to be found near the base of the plant. Insert them in sandy soil, and place them in a moderately dry position in an intermediate house. During summer the plants like plenty of water. In winter a cool greenhouse is the most suitable place for them, and during this period the watering must be done very carefully. Mature plants flower from about February to October. Although the shrubby species are essentially greenhouse plants, during very favourable seasons they can be grown successfully outside in a sunny position. A. aspera var. arborescens is the best plant for this purpose. The four representatives of these beautiful Cape plants which recently flowered in No. 4 greenhouse are as follow:—

A. aspera (See Supplementary Illustration.)

This is the most compact grower of the frutescent species in cultivation at Kew. The plant illustrated is rather more than 2 feet in

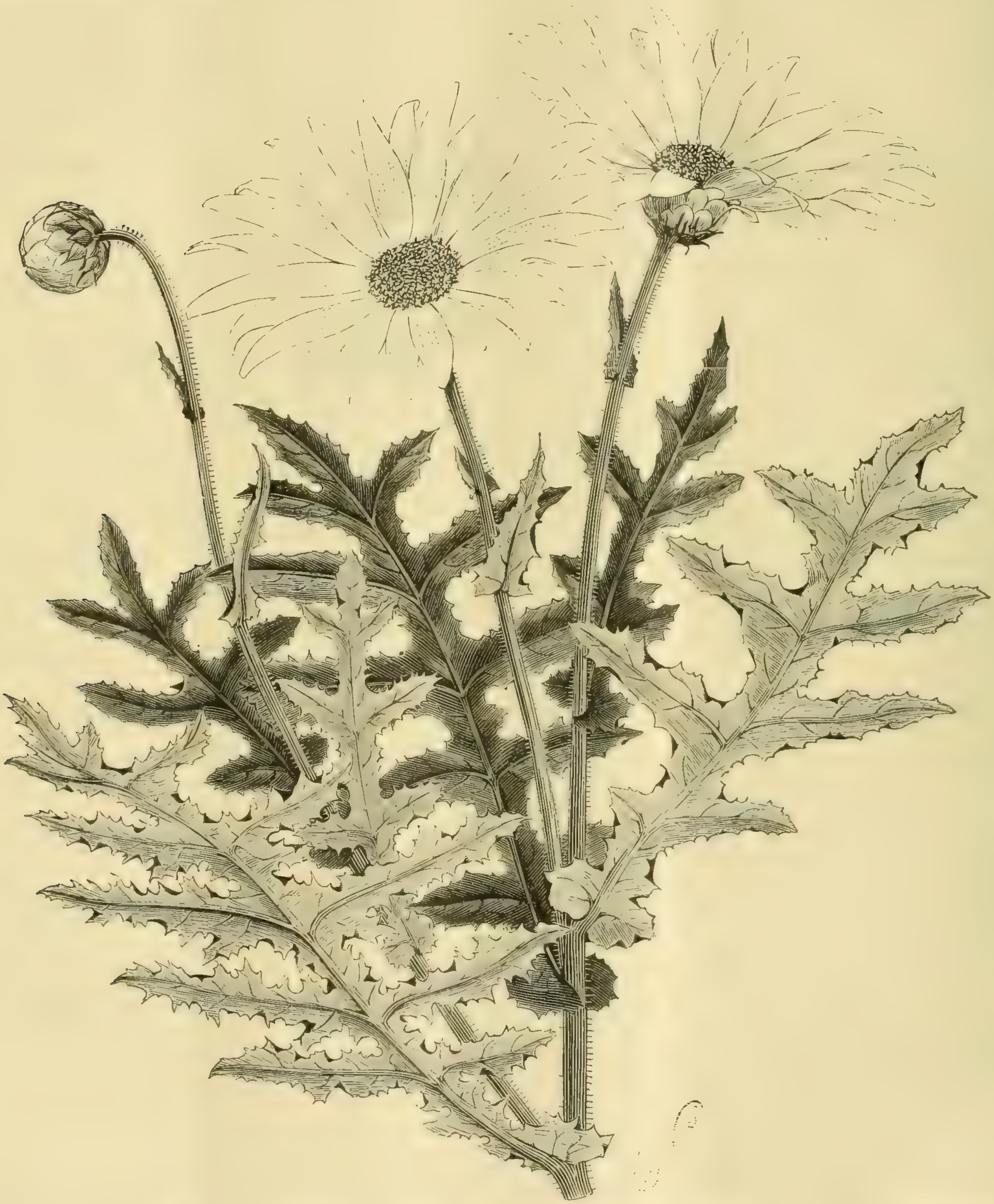


FIG. 127.—ARCTOTIS ASPERA VAR. ARBORESCENS; COLOUR OF FLOWERS CREAMY-WHITE ABOVE, AND ROSY-PINK UNDERNEATH.

height. The greyish green leaves are very handsome; in fact, were the flowers of no decorative value, the plant would be worth cultivating for its foliage. The outer involucre scales form, I believe, one of the points on which botanists determine the species. In this plant they are narrow and tomentose. The ray-florets are creamy-white, tipped with yellow near the base, forming a ring round the disc-florets. The underside of the ray-florets is tinged with pink. The flower-heads average 3 inches across. The variety arborescens is the most easily grown of the greenhouse section, rooting readily from cuttings. At Kew, plants two years from cuttings range from 4 to 6 feet in height. It has rather thick stems, while the leaves are more undulate than in the species. The underside of the ray-florets is a beautiful shade of rosy-pink; seen from below the flowers are even prettier than from above. It was illustrated in the *Gardeners' Chronicle* for February 3rd, 1883, p. 145 [which we reproduce at fig. 127.—Ed.] and also figured in the *Botanical Magazine*, tab. 6,528.

A. AUREOLA.

At one time considered to be a variety of A. aspera; growing side by side at Kew, they appear to be quite distinct. The stems and leaves are tomentose, giving the plant a silvery appearance. This helps to show off the rich orange-coloured flower heads to perfection. The flower heads average from 4 to 5 inches across. The outer involucral bracts are much broader than in A. aspera, and practically glaucous. The propagation of this species is rather slow; usually only a small percentage of cuttings succeed in making roots, although every care is taken. This is the most difficult part of its cultivation, as when once rooted the plants grow very freely. The plants flowering in No. 4 were rooted in April last year, and average 3 feet in height. I have heard of A. aureola being grafted on A. aspera var. arborescens with good results. It was figured with the next species in the *Botanical Magazine*, tab. 6 835.

A. REVOLUTA.

In general appearance this species is rather more slender than the foregoing. The outer involucral bracts are narrow, as in A. aspera, slightly pubescent, flower-heads 2½ to 3 inches across, ray-florets yellow, with a dark basal mark to each, forming a conspicuous ring round the disc florets. The Kew plant is 3 feet in height. It was introduced into this country about 1820.

A. LEPTORHIZA.

This is a beautiful annual readily raised from seeds. At a distance it might easily be mistaken for Gazania splendens. In seed lists it is usually sold under the name of A. breviscapa. *A. O.*

HOME CORRESPONDENCE.

The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Gardeners' Mutual Improvement Societies. The subject of federation has been considered by the committee of the Croydon and District Horticultural Mutual Improvement Society, who have examined the replies to my letter of February 17, published in these pages. My committee has engaged the lecture room at the R.H.S. Hall, Vincent Square, S,W., wherein to hold a meeting on October 16 next, whereat delegates from societies are invited to discuss the matter, and it is hoped that a provisional committee will be elected for the purpose of drafting a scheme of Federation of Horticultural Mutual Improvement Societies. All the Horticultural Improvement Societies throughout the British Isles who can send representatives are asked to do so, and failing their attendance I trust they will be good enough to write me in the meantime stating their views, that full consideration may be given to them. *Harry Boshier, Hon. Sec. to the Croydon and District Horticultural Mutual Improvement Society, 62, High Street, Croydon.*

Spring Cabbages.—I have made an exhaustive trial in order to test the merits of Flower of Spring versus the variety Ellam's Early Dwarf. These varieties were sown together at two different dates, and were both transplanted in due course and treated exactly alike in every respect. Out of 3,000 plants 10 per cent. of Ellam's Early Dwarf "bolted," while of the same number of Flower of Spring not a single plant has run to seed. I have always regarded the latter as the best variety in cultivation, and I am now more than ever convinced of its superiority, not only for its immunity from bolting, but for its evenness of growth and its general good qualities. *James Gibson, Welbeck Gardens, Worksop.*

The Distribution of Plants from the Royal Horticultural Society.—I am fully satisfied with what I have received both in regard to plants and seeds. The packing is most carefully executed, the plants being tied round with damp moss; they arrived in perfect condition even after several notoriously rough transfers and a long journey. This year I have received nearly everything I wanted, both for my employer's share and my own, which is astonishing when we take into consideration the 10,000 Fellows who are entitled to participate in a share, the limited number of the garden staffs and the short time that the Royal Horticultural Society has been at the Wisley Gardens. After all we should treat the distribution of plants and seeds, not as a right, but as a gift, and return thanks accordingly, as the Society was never intended to grow plants and seeds for its Fellows or to compete with the trade. If we turn to the report of the council for last year, p. 25, it fully explains how the distribution of surplus plants has arisen. The council clearly states:—(1) It is only surplus plants which are available. (2) There is no pretence made of their being either valuable or rare, though undoubtedly some are not usually met with. (3) As a general rule they are only small plants. Why, indeed, should I call a plant wretched or diminutive just because it is small. Those I have seen from the Royal Horticultural Society are healthy, and if not neglected they will grow. *H. R. Whitelaw.*

Forcing Strawberries.—To obtain ripe Strawberries in February and onwards, layers should be secured as early in the season as possible from plants which have not been allowed to fruit during the current year. Three-inch pots should be filled with soil made moderately firm, and the first plants that are formed on the runners selected. As soon as they are well rooted cut them from the parent plants and remove them to a shady place for a few days. When the small pots are full of roots the plants will be ready for shifting direct into the fruiting pots, which should be of a 6-inch size. A compost I find suitable for the final potting, and one that gives good results in forcing these fruits, is composed of good loam, to each barrow-load of which is added a 5-inch pot-full of artificial manure with a little soot, lime, and charcoal. The whole should be well mixed together. After being potted the plants should be placed in the shade for some days, and subsequently be removed to a sunny aspect to grow and ripen the crown, a point most essential to success. About the end of October they should be removed to cold frames and plunged to their rim in ashes, as a protection against frost. Gentle hot-beds should be used for forcing the plants, and cold draughts must be carefully excluded. I thin the fruits to about 6, 8, or 10 on a plant and the fruits average about one ounce each in weight. I enclose a few fruits of Royal Sovereign gathered from plants treated as above. *A. R. Pearce, The Gables Gardens, Kenilworth.* [Very satisfactory fruits.—Ed.]

Cymbidium Lowianum.—I am sending you a photograph of a plant of Cymbidium Lowianum in flower at the present time with 17 flower-spikes that are carrying 235 individual blooms. The plant was last spring given a good top-dressing of a mixture consisting of equal parts loam, peat and moss, and it was watered alternately with diluted soot water and cow-manure water. The plant has been growing in an intermediate house, and is in a 12-inch pot. *Herbert Jones, Craigenhall Gardens, Falkirk.* [A good specimen, but we have illustrated this species on many occasions. Ed.]

Saxifraga juniperifolia (see p. 284).—I am surprised to find from Mr. Arnott's note that this species is not always a success. When I said it was of quite easy cultivation in common soil I was speaking from experience obtained during many years and in many districts. I should as soon expect to fail with such common-place things as Arabis or Aubrietia as with Saxifraga juniperifolia. I can understand the plant failing on rockeries of a certain description, as the plant would be far happier in the cabbage plot. It will grow and spread freely in any cool situation, but cannot endure its roots being in a few inches of over-drained soil in full sunshine. Nearly 30 years ago, when taking charge of a northern collection of hardy plants, I was told I could not grow the plant there and that to increase it was out of the question. At the same time I was shown a nice tuft that had existed for many years in one spot. At the end of the first year I was able to show my challenger upwards of three dozen saleable plants in pots, and a tuft in a low cool spot—quite near to Gentiana Andrewsii—on the rockery, of a larger size than the original. In the sand plunging beds at Tooting the plant was always a success. The glass covering referred to by Mr. Arnott is a mistake, and a good depth of ordinary soil in a comparatively cool spot would better suit this shy flowering species. *E. H. Jenkins.*

SOCIETIES.

ROYAL HORTICULTURAL.

May 16.—Owing probably to the nearness of the Temple Show, the exhibition on Tuesday last at the Hall in Vincent Square, Westminster, was not quite so good as usual. There were fewer entries for Orchids, and the Orchid Committee recommended only three Awards of Merit to novelties, and no First Class Certificate! Several Diplomas, however, were awarded in the special competition for these.

The Floral Committee recommended a First Class Certificate to a variety of Davallia solida, and three Awards of Merit to other plants.

The Narcissus and Tulip Committee had an extensive collection of Tulips to inspect, and these constituted one of the dominant features of this meeting. Nine Awards of Merit were recommended to varieties of Tulips.

The Fruit and Vegetable Committee had more to inspect on this occasion than at previous meetings this season, including some extraordinary fruits of Royal Sovereign Strawberry from Lady Plowden. An Award of Merit was recommended to a variety of Broccoli.

At the afternoon meeting 80 new Fellows were elected, and a lecture on "Flower Gardens in the United States," by Professor Corbett, was read by the Assistant Secretary.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. J. W. Green, T. W. Turner, C. J. Salter, C. T. Druery, George Nicholson, J. W. Barr, J. F. McLeod, R. Hooper Pearson, W. Howe, Chas. E. Pearson, A. R. Goodwin, C. Blick, Chas. Jeffries, Geo. Gordon, W. Bain, J. Douglas, Chas. E. Shea, E. T. Cook, Chas. Dixon, W. P. Thomson, E. H. Jenkins, W. Cuthbertson, M. J. James, Geo. Paul, Ed. Mawley, Jno. Jennings, R. C. Notcutt, and J. Hudson.

Before commencing the usual business of the committee, sympathetic reference was made by the chairman to Mr. H. B. May, who had that morning suffered a bereavement in the sudden death of his wife. It was decided to send a letter of condolence to Mr. May.

Messrs. James Carter & Co., 237, 238, High Holborn, London, put up a large group of Cinerarias, the majority being of the large-flowered florists' type, with a few of the taller-growing stellata strain at the back. The exhibit formed a bright bank of diverse colours, and was well arranged. (Silver Flora Medal.)

Messrs. R. & G. Cuthbert, The Nurseries, Southgate, staged a collection of Ivy-leaved Pelargoniums. They had the new variety Gringori in good form, the plants being well furnished with large trusses of magenta-coloured flowers. Willie is new this season; the flowers are scarlet, and not unlike those of the Zonal type. Other good sorts are Beauté Suprême, with large trusses of flowers of a salmon shade, developed on long peduncles; and Resplendent, the pips being rosy-carmine in shade, broad, and aggregated on tall stalks that display the flowers well above the foliage. (Silver Banksian Medal.)

Messrs. W. & J. Brown, Nurserymen, Stamford and Peterborough, contributed a display of greenhouse plants, among which were some well-grown plants of Heliotrope Lord Roberts, Verbenas, Petunias, Cactus-flowered Pelargoniums, &c.

Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea, showed a batch of Schizanthus hybrids. The plants represented a very choice strain of this floriferous greenhouse subject, being compact in habit and showing a good selection of colours. (Silver Banksian Medal.)

An interesting collection of plants was shown by Messrs. Paul & Son, The Old Nurseries, Cheshunt. Arbutus procera has Rhododendron-like foliage and a terminal raceme of small white flowers; the inflorescence may be likened to a bunch of Grapes. Baccharis patagonica is a shrubby Composite. Cytisus Heuffeli produces its yellow-coloured flowers in whorls of five at the end of the branches. Garrya elliptica in fruit, Sedum thymifolium, Rhododendrons, Lilacs, &c.

Lovers of ornamental trees and shrubs found much that was interesting. Quite a bevy of beautiful things came from the gardens of Sir Edmund Loder, Leonardslee, Sussex (gr. Mr. W. A. Cook). Trusses of Rhododendron flowers were very showy; two of the finer were heads of R. Blandfordiæflorum, and R. cinnabarinum. The rare Fendlera rupicola was nicely in flower; Grevilleas in many kinds, Ericas, including the new E. Veitchii, Camellias, Magnolias, Halesia tetraptera, and a host of other beautiful things. (Silver Gilt Flora Medal.)

Similar to the last-named group was a display of flowering trees and shrubs shown by Lord Aldenham, Elstree (gr. Mr. Ed. Beckett), Acers, Magnolias, Spiræas, Honeysuckles, Crab-apples, Cratægus, Ribes, and similar subjects, in many species and varieties, formed an object-lesson of much value. (Silver Gilt Banksian Medal.)

Messrs. R. Veitch & Son, Exeter, contributed many interesting plants in flower, and sprays of such ornamental subjects as Sutherlandia frutescens and several varieties of Edwardsia tetraptera, both leguminous plants, with red and yellow flowers respectively; Jamesia americana, Cytisus purpuraceus incarnatus—a capital garden plant; Abutilon vitifolium, with numerous white flowers, as handsome as the Japanese Anemone; Citrus trifoliata, with tortuous spines and fragrant, white flowers; Potentilla dahurica, like a beautiful, single, pink Rose; Embothrium coccineum, and the big Forget-me-not, Myosotideum nobile, &c.

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, staged over one hundred varieties and species of hardy Ferns. Crested, plumose, linear, and other forms of Aspleniums (Athyriums), Osmundas, Adiantums, Scolopendriums, Lastreas, &c., represented quite the best among the hardy members of these beautiful foliage plants. Mr. May also exhibited named varieties of Pansies, and a bright blue Lobelia named Waverley Blue. (Silver Gilt Banksian Medal.)

Mr. C. G. van Tubergen, Jun., Zwanenburg

Nurseries, Haarlem, Holland, showed a number of the beautiful Regelio-Cyclus Irises that attracted much attention when first displayed about two years ago. Some of those shown have already been described in our columns, and a new one will be found under "Awards."

The Craven Nursery Co., Clapham, Yorkshire, showed some rare and choice hardy plants and Alpines. Ranunculus glacialis was nicely in flower; a batch of Androsace vitaliana and another of Eritrichium nanum were also shown well; Haberlea rhodopensis and the white form, H. r. virginalis, also deserve mention.

Mr. M. Prichard, Christchurch, Hants, showed hardy plants, including pink and white forms of the common Blue-bell. Scilla nutans violacea is of a deep blue shade. (Bronze Flora Medal.)

Messrs. John Peed & Son, West Norwood, London, showed a small collection of Alpine and rock-garden plants, and trays of Gloxinia flowers in named varieties. In another part of the Hall Messrs. Peed displayed a collection of ornamental Maples, interspersed with large-flowering Clematis and Ceanothus. (Silver Flora Medal.)

Messrs. Thos. S. Ware & Co., Ltd., Feltham, Middlesex, had many hardy plants and flowers, including a number of the best kinds of Aubrietias, Calochortus Maweanus, Gentiana Kesselringi, a nice pan of Ramondia pyrenaica, Irises, Pæonies, &c. The same firm also displayed a group of tuberous-rooting Begonias, quite the best that have been exhibited in the Hall this season. (Silver Gilt Banksian Medal.)

Messrs. G. & A. Clark, Ltd., Dover, Kent, had a small collection of hardy flowers and rock-garden plants, and a new salmon-coloured Zonal Pelargonium named Clark's Superb. (Bronze Flora Medal.)

A batch of the lovely Pink Pearl Rhododendron was shown by Messrs. John Waterer & Sons, Ltd., Bagshot, Surrey. The plants were 18 inches to 2 feet high, but, although small, they had very large trusses of their delightful flowers. (Silver Flora Medal.)

Mr. Chas. Turner, Royal Nurseries, Slough, staged a group of pyramid-trained Azaleas, furnished with flowers to the ground level. Very fine were the varieties Rosa Bonheur, a double flower of crimson shade, and Apollo, with large red "bells." Mr. Turner also showed a magnificent specimen of Asparagus Sprengeri in the flowering stage. (Silver Flora Medal.)

Several good displays of Roses were seen, one of the best being those shown by Mr. Geo. Mount, Canterbury, Kent. The blooms appeared remarkably bright, and were carried on the ends of long, robust growths, an epergne of the famous Ulrich Brunner being especially fine. Mrs. J. Laing, Lady Roberts, Catherine Mermet, Bessie Brown, and Mrs. Ed. Mawley are some of the best varieties shown. (Silver Gilt Flora Medal.)

Messrs. Ben. Cant & Sons, Colchester, also exhibited Roses, having some nicely-flowered plants and a display of cut blooms. The copper and yellow-flowered Austrian Briars looked very beautiful, the colours being remarkably clear. Killarney, Mad Cousin, the new, pale rose-coloured Mrs. O. G. Orpen, a single of great beauty, was noticed; also Mrs. W. J. Grant, Mrs. Ed. Mawley, and others as beautiful. (Silver Gilt Banksian Medal.)

Messrs. W. Paul & Son, Waltham, Herts, showed new climbing Roses. Kathleen has heavy bunches of single, rose-pink flowers, the trusses being produced in profusion; the centres of the flowers are white, the pink colour being found at the upper halves of the petals. Cora is a double variety of very pale rose shading.

Messrs. Geo. Jackman & Son, Woking, Surrey, showed a new Clematis named Lady Northbrook. The large flowers are lavender-blue in colour.

C. S. Layton, Esq., Thornton, Harrow Weald (gr. Mr. L. Souch), put up a small group of herbaceous Calceolarias. (Bronze Banksian Medal.)

Mr. Amos Perry, Hardy Plant Nurseries, Winchmore Hill, and Enfield, London, N., again showed Phlox canadensis, "Perry's variety." Some nice forms of Trollius were also noticed, and the brilliant Tulipa Ostrowskiana. (Bronze Flora Medal.)

Mr. A. R. Upton, Guildford Hardy Plant Nursery, Guildford, brought a selection of hardy plants in season. (Bronze Flora Medal.)

Messrs. Sutton & Sons, Reading, showed Forget-me-nots in different shades of colours, alternating bands of pink with light and dark-blue varieties. The variety Star of Love is of neat compact habit, and formed a suitable edging to the group.

Messrs. Cannell & Sons, Swanley, Kent, staged a number of small pot plants of Rose Mad. Levavasseur, each little plant being a picture of beauty. They had also a display of Zonal and Show Pelargoniums, and a vase of the scented-leaved P. Clorinda. (Silver Flora Medal.)

Messrs. Cutbush & Son, Highgate, London, N., showed a group of mixed greenhouse plants, Ericas, Verbenas, Rhododendrons, Callas, &c., and baskets of rambler Roses. (Silver Banksian Medal.)

Messrs. Hugh Low & Co., Bush Hill Park Nurseries, also staged flowering greenhouse plants, and they had also a display of Roses and Carnations in popular varieties.

Messrs. Geo. Bunyard & Co., Maidstone, Kent, showed a number of hardy flowers in season. (Silver Banksian Medal.)

A small collection of these flowers was also shown by the Misses Hopkins, Mere, Knutsford. (Bronze Banksian Medal.)

Mr. James Douglas, Great Bookham, Surrey, again brought Auriculas as beautiful and almost as numerous as at the last meeting. (Silver Gilt Flora Medal.)

Mr. N. Lowis, Eversdown, Bridgwater, again made a display of St. Brigid Anemones, as at the last two meetings.

Mr. Jas. Harris, Blackpil Nurseries, Swansea, also exhibited vases of these pretty spring flowers.

Mr. G. Reuthe, Hardy Plant Nursery, Keston, Kent, had showy trusses of Rhododendrons, Irises, hardy Orchids, and a selection of the best kinds of Tulips.

Mr. Robert Sydenham, Tenby Street, Birmingham, again displayed a group of Sweet Peas, similar to those exhibited by him at the last meeting. (Silver Flora Medal.)

Messrs. Dobbie & Co., Rothesay, N.B., staged Violas and Pansies, including the new variety Mary Burnie, shown at fig. 124, page 306. (Silver Flora Medal.)

Mr. J. A. Young, Putney, showed a small group of Cinerarias, principally of the stellata type. (Bronze Banksian Medal.)

From Lady Plowden's garden, Aston Rowant, Wallingford, Oxon (gr. Mr. W. H. Clarke), came an extraordinary fine specimen of the old, but seldom grown stove plant, Plumiera bicolor (Apocynaceæ), also sprays of Bignonia buccinator. The flowers are of crimson and orange colours, and the plant makes an excellent trailer for a cool or intermediate plant house.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. Bain), exhibited a small plant of Asparagus filicinus. It is a flat "leaved" species with axillary flowers of small size, greenish colour, produced solitary or in pairs, and having very slender pedicels 1½ inch long. The species should make a good decorative plant.

Awards.

Davallia solida variety superba.—This plant, exhibited by Mr. H. B. May, caused considerable surprise, for it exhibited unusual variation from the type. Not only are the fronds somewhat crispate, instead of flat, as in the species, but the young fronds are tinted with red, whereas those of D. solida are green. The variety will make a capital decorative plant, and it was awarded a First Class Certificate.

Dianthus "Spencer Bickham" is described as a hybrid obtained from D. alpinus and D. deltoidea. It is a very pretty little plant for the rockery, growing about 5 to 6 inches high, and producing reddish flowers ½ inch across, with toothed petals. Shown by Messrs. R. Veitch & Son, Exeter. (Award of Merit.)

Iris mecate.—Another beautiful variety of the Regelio-Cyclus section, obtained from crosses between Regelio and Oncocyclus Irises. This particular variety is not, as shown, quite so large in the size of the flowers as those illustrated in the *Gardeners' Chronicle*, May 28, 1904, also from Mr. Tubergen. The standards are of violet colour and very showy, but there is even more beauty in the falls, where many shades contribute. The centre of each fall is brown, and the veining beyond is also brown; but the spaces between the veins, and especially towards the margins of the falls, are yellow. (Award of Merit.)

Rhododendron Mrs. E. C. Stirling.—This is a first-class hardy Rhododendron, having had for one of its parents R. catawbiense. The flowers are self-coloured, of a rich though delicate shade of pink, and make a very noble-looking "truss." The buds before expanding are deeper in shade, being reddish. It was compared by some to Pink Pearl, which is peerless; but the new variety, if less magnificent, is, nevertheless, so distinct that both are desirable. Shown by Messrs. J. Waterer & Sons, Ltd., Bagshot.

Tulip and Narcissus Committee.

Present: J. T. Bennet Poë, Esq. (Chairman), and Messrs. W. Poupart, Jas. Walker, J. R. de C. Boscawen, R. W. Wallace, J. W. Leak, J. D. Pearson, P. R. Barr, Alex. M. Wilson, G. Reuthe, W. T. Ware, E. A. Bowles, G. S. Titheradge, J. Jacob, R. Sydenham, and Chas. H. Curtis (Hon. Sec.).

A particularly fine group of Tulips was staged by Messrs. R. Wallace & Co., Colchester, whose exhibit embraced a large array of true Darwin kinds in company with the finest of the May-flowering and cottage Tulips. Mention may be made of such handsome varieties as Flame, Coronation Scarlet, Gesneriana lutea pallida, that superb Tulip known as Inglescombe Pink, also Inglescombe Scarlet, etc. Among the Darwins King Harold, Clara Butt, and the refined flesh-pink flowers of Mrs. Cleveland call for especial mention. (Silver-Gilt Flora Medal.)

Messrs. Barr & Sons, Covent Garden, London, also staged a fine display of Tulips, having cottage, May-flowering and Darwin kinds in many shades of colours. We select the varieties Torch, Queen Alexandra, Louis XIV., Clara Butt, Schazada (fine crimson), Asturie (crimson and white), and Bouton d'Or as some of the best in the group. (Silver Banksian Medal.)

Messrs. Hogg & Robertson, St. Mary Street, Dublin, had a good display of these flowers, though we understand that not a few of the blooms had suffered from a severe storm in transit. Fairy Queen, Amber, Summer Beauty, Henner (a fine crimson variety), Ixioides, the fine Gesneriana lutea, Mark Graaff, and Yellow Queen embrace some of the best sorts noticed. The group also contained a fine assortment of the Parrot Tulips. (Silver Flora Medal.)

Very fine were the Tulips from Mr. Alex. M. Wilson, Spilsby, Lincolnshire, which included a large and representative assortment. Picotee, the soft yellow Vitellina, Loveliness, Pride of Haarlem, and Hobbema (pink) are important and good kinds. (Silver Flora Medal.)

Messrs. R. H. Bath & Co., Floral Farms, Wisbech, had an extensive display of these flowers in the best kinds. In this group the blooms were arranged in larger masses, and the effect secured warranted the innovation. Fanny, Isis, King Harold (rich crimson), Sultan (a very dark flower), La Tulipe Noire, Inglescombe Pink, and the pleasing yellow Mrs. Moon were all good. (Silver-Gilt Banksian Medal.)

Messrs. Alex. Dickson & Sons, Ltd., Dublin and Belfast, also contributed a fine group of these flowers. Striped Beauty was very conspicuous and good. Other notable flowers included Tulipa retroflexa (clear soft yellow), the fine pink Hobbema elegans alba, Psyche, Mrs. Farncombe Sanders (a fine crimson and scarlet flower with a clear white base), and Jaune d'Œuf (a distinct and handsome Tulip of yellow colour flushed with rose). Bronze Ring was also noticeably good and distinct. (Silver Flora Medal.)

Smaller collections of Tulips were exhibited by Mr. G. Reuthe, Keston, Kent; Messrs. Wm. Bull & Sons, Chelsea; Paul & Son, The Old Nurseries, Cheshunt, in whose group English, Darwin, cottage, and other kinds were noted; Messrs. Dobbie & Co., Rothesay, whose exhibit was entirely composed of Parrot Tulips; and by Mr. Walter T. Ware, Bath, who had many handsome cottage varieties.

Awards of Merit.

Tulip Gesneriana lutea.—This is one of the most pleasing of the Gesner section of Tulips. The rich yellow flowers are of large size and of good form. From Mr. W. B. Hartland, Cork.

T. Henner (Darwin).—A splendid Tulip of great size and substance and the fine cup outline. Its shade of crimson colour is like that of King Harold.

T. Millet (Darwin).—A rich ruby-crimson flower with well-defined dark-coloured base.

T. Isis (Darwin).—A fine scarlet variety, remarkable for its firmness and for the size of its flowers.

T. Psyche (Darwin).—A delightful flower of a pale rose-pink shade, and with base a pale blue colour internally. A very distinct and pleasing variety.

The above four varieties came from Messrs. R. Wallace & Co., Kilnfield Gardens, Colchester.

T. Walter T. Ware.—A magnificent Cottage Tulip, in which a fine orange-gold colour is a feature. We know of no other Tulip to compare with it in this respect. The flower is large and shapely, the petals being finely pointed.

T. Inglescombe Yellow.—In the form and general bearing of the flower we regard this a Darwin Tulip, but perhaps it should be placed among the cottage Tulips. The flower is of exceeding beauty and fine finish, its colour being a clear and good yellow.

T. Yellow Picotee.—A pretty Tulip, coloured a soft canary yellow, and lightly edged with scarlet.

T. Beauty of Bath.—A very distinct cottage Tulip, coloured cream and yellow.

The above four varieties were exhibited by Mr. Walter T. Ware, Bath.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), Messrs. Jas. O'Brien (Hon. Sec.), W. A. Bilney, De B. Crawshay, W. Bolton, H. Ballantine, R. G. Alexander, H. A. Tracy, W. H. Young, H. G. Morris, W. H. White, Arthur Dye, G. F. Moore, A. A. McBean, W. Cobb, W. Boxall, H. Little, Elijah Ashworth, R. G. Thwaites, C. J. Lucas, Jeremiah Colman, Harry J. Veitch, R. Brooman-White, and Francis Wellesley.

H. T. Pitt, Esq., Rosslyn, Stamford Hill, staged a small group of five "gems" of the favourite Odontoglossum crispum, most of which had been shown previously, but never in such fine condition. They were O. crispum Pittianum, that magnificent blotched variety which was recently illustrated in the *Gardeners' Chronicle* and which was much admired at the time when a small plant of it realised 1,150 guineas at Messrs. Protheroe & Morris' rooms. The plant bore a heavy spike of 13 fine blooms. Scarcely less beautiful was a noble specimen of O. crispum Pittiæ, with two spikes bearing 15 and 14 flowers respectively. This finely-blotched form resembles Pittianum, but shows more white between the blotches; O. crispum Capartianum, a grand flower with a singularly arranged belt of reddish blotches around the central larger ones; O. crispum Ashworthianum, developed until the sepals and petals were nearly entirely of a reddish-purple colour, with narrow white margin; and the very large and finely-formed O. crispum "Magnum Bonum," a grand typical white variety. (Silver Gilt Flora Medal.)

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), staged a very interesting and brightly-coloured group of rare Orchids. At one end was a collection of 24 very pretty Masdevallias, including two varieties of the scarlet M. Rushtoni, M. Chelsoni, several forms of M. caudata, M. hieroglyphica, M. igneo-Estradæ, M. Pourbaixii, M. Doris, M. Ajax, M. Ferrieriensis, M. Stella, &c. With them were bunches of cut spikes of Epidendrum O'Brienianum, E. xanthino-radicans, E. Ellisii, E. Boundii, E. Schomburgkii, and E. radicans. Also plants of E. glumaceum, the pretty and rare white and violet E. Endresii, E. arachnoglossum, E. elongatum, E. Linkianum, the pure white E. montanum, the single lilac-coloured hybrid Epi-Cattleya radiato-Bowringiana, the rich scarlet Epiphronitis Veitchii, Dendrobium formoso-Lowii, D. Dallion-nobile, and a specimen of the singular Bulbophyllum Reinwardtii. (Silver Flora Medal.)

Messrs. Cypher & Sons, Exotic Nursery, Cheltenham, arranged a fine group, in which good forms of Miltonia vexillaria, very handsome Lælia purpurata, especially the large, finely-formed, and richly coloured L. p. Duchess; good Odontoglossums and Cattleyas formed the greater part. Others noted were Cypripedium callosum Sanderæ, C. Harrissianum superbum, and a finely-coloured hybrid between it and C. oenanthum superbum; good C. niveum, C. Fascinator, C. Gowerianum magnificum, and other Cypripediums; Cattleya Skinneri alba, good C. Schröderæ, and a very handsome C. Mendeli, with carmine rose-coloured frilled lip. Also Lælio-Cattleya Hyeana, L.-C. G. S. Ball, the singular L.-C. purpurata Acklandiæ and other hybrids. (Silver Flora Medal.)

A. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), staged an extensive and varied group of Odontoglossum crispum, Cattleyas, varieties of Miltonia vexillaria, &c., the group having several specimens of Cymbidium Lowianum with their long arching spikes arranged at the back. With them were Lælio-Cattleya Zephyra, L.-C. highburyensis, Lælia Latona, Cœlogyne corrugata, good Cattleya Mendeli, Mossiæ, and Schröderæ, &c. (Silver Flora Medal.)

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), showed an effective group of Odontoglossum crispum and other Odontoglossums, Lælio-Cattleya Hyeana, L.-C. G. S. Ball, and others. (Silver Banksian Medal.)

Messrs. Hugh Low & Co., Enfield, had a good group, in the centre of which was a fine specimen of Cattleya Skinneri, with 72 flowers. Around it were several of the pretty Dendrobium Bensonæ, and on each side selections of Cattleya Mossiæ and C. Schröderæ. Specially noteworthy were a distinct variety of C. Schröderæ with pale lilac sepals and petals, the front of the lip being light purple; a nearly white variety of C. Schröderæ; the handsome and darkly coloured Lælia purpurata Davisii, and Cattleya Lawrenceana. (Silver Banksian Medal.)

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. H. Ballantine), showed the fine and handsomely blotched Odontoglossum crispum Sanderianum for which he received a First Class Certificate on May 12, 1885. The fine plant bore 11 flowers.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cypripedium Lawrenceanum Hackbridgense, probably the finest coloured form of C. Lawrenceanum, and which has borne a high character ever since it appeared in the collection of the late Mr. Alfred Smee. Also Lælia cinnabrosa "Flambeau" with orange-tinted flowers with a reddish glow, and Cypripedium barbatum "The Premier," a large flower with fine round dorsal sepal.

Col. Brymer, Ilsington House, Dorchester, (gr. Mr. Powell), showed Cœlogyne Brymeriana × (Dayana × asperata). A singular cross which, although evidently correctly recorded, gives results in effect somewhat resembling C. Massangeana. The pendulous raceme of 19 flowers had the sepals and petals whitish and the lip marked with light brown colour.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), sent Odontoglossum tripudians "Cecil Grey." A good flower heavily barred with brown, and with white labellum with a violet purple blotch.

Mr. Jas. Douglas, Edenside, Great Bookham, sent Cypripedium Lawrenceanum "Douglas variety," near to the green-tinted C. L. Hyeanum.

Messrs. J. & A. A. McBean, Cooksbridge, sent Odontoglossum crispum "Aphrodite." A noble typical form with very broad segments, tinted with rose. The spike bore 12 flowers.

Major G. L. Holford, Westonbirt, Tetbury (gr. Mr. H. G. Alexander), showed Cattleya Mossiæ Reineckiana, "Westonbirt variety." A fine white with rose-purple markings on the lip. The plant was magnificently grown and the spike bore four flowers. Also Odontoglossum crispum, "Westonbirt variety," a splendid large-flowered white form. The plant, which was an illustration of good culture, bore three spikes—two of 11 and one of 10 flowers—and secured for Mr. Alexander a well-merited Cultural Commendation.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent Odontoglossum ardentissimum "Dorothy Fox," a pretty white variety, blotched with rose-purple and formed like a large O. Pescatorei.

Awards of Merit.

Cattleya intermedia "White Queen," from Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins). A charming, large pure white form, an advance of the fine C. intermedia Parthenia and with much broader and more openly displayed labellum.

Cypripedium Miss Louisa Fowler var. superba (Chamberlainianum × insigne var.), from J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr J. Davis). One of the best of the Chamberlainianum crosses. Upper sepal creamy white at the margin, the central area emerald green, with heavy dotted lines of chocolate purple; petals tinged purple and spotted on the inner halves; lip pale rose, with yellow margin.

Odontoglossum crispum aureum "Laburnum," from Messrs. J. & A. A. McBean, Cooksbridge. A very extraordinary and beautiful form. Sepals, pale yellow, tinged with purple at the back; petals broad and fringed, pale yellow; lip bright yellow, with a few chestnut spots. In these extraordinary variations there is always a suggestion of hybridity at some remote period, but the crest is the final test, and in this instance there is no indication other than that furnished by O. crispum.

Diploma Awards.

Odontoglossums. *First Diploma.*—O. excellens, "The Dell variety," from Baron Schröder (gr. Mr. Ballantine). *Second Diploma.*—O. Coradinei mirabile, from Baron Schröder. These two awards were made on May 1.

Miltonia vexillaria. *First Diploma.*—M. v. "Memoria G. D. Owen," from Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young). Flowers large, pale rosy lilac with a large triangular dark blood-red marking at the base of the lip. The plant, though small, bore a spike of very large and finely-formed flowers. *Second Diploma.*—M. v. magnifica, from Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound). A very large and round flower of a bright rose colour.

Hybrids of Epidendrum radicans. *First Diploma.* — Epiphronitis Veitchii from Jeremiah Colman, Esq. The beautiful rich scarlet hybrid between E. radicans and Sophronitis grandiflora raised years ago by Messrs. Veitch. *Second Diploma.*—Epidendrum Boundii (Burtoni × radicans), from J. Colman, Esq. The very floriferous hybrid raised at Gatton. The orange and yellow forms were shown.

H. L. Bischoffsheim, Esq., Warren House, Stanmore (gr. Mr. Ellis), and R. I. Measures, Esq., Camberwell (gr. Mr. Smith), showed cut examples of good forms of Lælia purpurata, but no awards were made.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman), and Messrs. S. Mortimer, A. Dean, H. Parr, Geo. Kelf, Ed. Beckett, J. Davis, J. Lyne, W. Barnes, Geo. Reynolds, J. Willard, P. C. M. Veitch, C. Foster, J. McIndoe, Owen Thomas, and A. R. Allan.

One of the best exhibits was the half-dozen or more Peach trees in pots shown by Messrs. T. Rivers & Son, Sawbridgeworth, Herts. The varieties were Duke of York and Duchess of Cornwall, and a basket of fruits of the former variety was shown separately. (Silver Knightian Medal.)

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, exhibited about 50 dishes of Apples. Although shown at this late season, they were fairly plump, and representative of the best late keeping varieties. (Silver Knightian Medal.)

Lady Plowden, Aston Rowant, Oxon (gr. Mr. W. H. Clarke), sent a box of extraordinary fruits of Royal Sovereign Strawberries, to which a Silver Banksian Medal was awarded.

Lord Aldenham, Aldenham House, Elstree (gr. Mr. Ed. Beckett), showed 12 varieties of Cabbage Lettuce in batches, the collective plants making a large display. They were growing in 48's pots, and looked very tempting. The best kinds were Golden Queen, which had "hearts" as stout as little Cabbages; Buttercup, a pale-green variety with tender leaves; Iceberg, with crumpled leaves that recurved, enclosing a fairly large heart, and Marvel, a big reddish-brown variety. Bunches of Tomato Sunrise were also shown by this exhibitor. (Silver Banksian Medal.)

The Horticultural College, Swanley, Kent (gr. Mr. Lawson), put up a small collection of vegetables—Cucumbers, Marrows, Lettuce and Tomatos, with a couple of boxes of Royal Sovereign Strawberries.

Messrs. W. Cutbush & Son, Highgate, London, N., displayed leaves of Hobday's Giant Rhubarb.

Mr. T. A. W. Metcalfe, The Gardens, Luton Hoo, Beds., presented a new seedling Cabbage Lettuce.

Mr. S. Mortimer, Rowledge, Farnham, Surrey, displayed two boxes of Tomatos, the small, round, Sunrise and the larger corrugated Winter Beauty.

Award of Merit.

Broccoli Peerless.—The plants shown from the Wisley Gardens were undeveloped, but members of the Committee were acquainted with its superior merits, and the award was given mainly on their recommendation. It is described as being exceedingly hardy, dwarf, and of compact habit.

THE LECTURE.

Among the 80 new Fellows elected at the general meeting of Fellows were Viscount Dalrymple, Lady Gwendolen Little, Lady Letchworth, Lady Lindsay Hogg, Capt. the Hon. L. F. King-Noel, Baron Victor von Pelken, and Mrs. Dudley-Smith. An interesting paper on "Some Phases of Twentieth Century Horticulture in the United States," by Professor Corbett, Horticulturist of the Department of Agriculture at Washington, was read, in which he drew attention to the effect of the rapid growth of the great centres of population and the perfected railway facilities in the States, by means of which, when the market garden supply became too small for the local needs, trains were despatched for 1,500 to 2,000 miles distance, which from the warmer zones brought fruit and vegetables formerly grown under glass, and thus luxuries became necessities. The subjects of nature study, experiment stations, land settlement, the rural press, and assisted allotments were all included in this comprehensive and interesting paper, which will be published in the society's journal.

CROYDON SPRING FLOWER SHOW.

May 2.—The sixth annual spring flower show of the Croydon and District Horticultural Mutual Improvement Society, was held in the Horniman Hall, Y.M.C.A., North End, on the above date, and proved to be the best of all the spring flower shows promoted by this society. No entrance fees were charged, no prizes were offered, exhibits were cordially invited, and admission was free.

A prominent feature of the show was a collection of plants staged by Mr. T. Butcher, of Croydon and South Norwood. Dr. Jackson (gr. Mr. W. Panley) also sent a nice collection of plants. A fine stand of Orchids was contributed by Mr. F. W. A. Radford, of South Park Hill (gr. Mr. T. Padley); the group contained some excellent Odontoglossums, Cattleyas, and Dendrobiums. Mr. G. Curling, of Addiscombe (gr. Mr. W. Bentley), sent a fine group of miscellaneous plants, and another striking exhibit was that shown by Mr. F. Lloyd, of Coombe (gr. Mr. M. E. Mills), the collection being bulbous and hardy flowering plants. Another miscellaneous group of plants, conspicuous amongst which were some excellent Calceolarias, came from the gardens of Mr. J. Pascall, of Ambleside, Addiscombe (gr. Mr. A. Edwards). The president of the Society, Mr. J. J. Reid, of Coombe Lodge (gr. Mr. F. Oxtoby), contributed a collection of flowering plants, which included some very fine Mignonette, Stocks, and Schizanthus. Two specimens of Asparagus Sprengeri were also sent by the president. A very interesting collection was that shown by Mr. C. A. Blogg, of Hailing Road, in his group of Cacti and other Mexican and South African plants. Tulips were shown by Messrs. J. R. Box & Co., of Croydon, all of them being good in colour and of standard varieties. An interesting cottager's exhibit was put up by Mr. J. R. Filce, of Handcroft Road, the collection including Auriculas, Pansies, and double Wallflowers. Messrs. E. W. and S. Rogers, of Croydon and Thornton Heath, sent a collection of Tulips and Narcissi, the Tulips being very good, both in regard to size and colour. Mr. J. J. Pitman, of Waddon (gr. Mr. A. Dyer), showed herbaceous Caleolarias. Messrs. J. Cheal & Sons, of Crawley, contributed rock, garden, and Alpine plants, hardy flowers and flowering shrubs. Hanging overhead, in the centre of the room, was a large specimen of Asparagus Sprengeri, the sprays, when fully extended, measuring no less than 12 feet; it was shown by Mr. W. Baskett, gr. to Mrs. Lanyon, Birdhurst. Messrs. J. Peed & Son, of West Norwood, had a display of Gloxinias. The same firm also sent Alpine plants, Clematis, and rock garden plants.

The microscope recently acquired by the Society for the purpose of horticultural research was exhibited in the room, and was inspected with interest.

LINNEAN SOCIETY OF LONDON.

May 3.—Prof. W. A. Herdman, F.R.S., President, in the chair.

The discussion as to the origin and genealogy of the Conifers was resumed by Dr. Scott, from whose remarks the following note is extracted :—

As regards the other great question under discussion—the affinities of the Coniferæ—the data are still very inadequate, for we have little knowledge of the structure of the early forms of Coniferæ. In some Permian plants referred to Araucarieæ, the structure of the wood was of the *Araucarioxylon* type, a wide-spread form of wood, common to Cordaiteæ, Pteridospermeæ, and even Botryopterideæ, but almost wholly absent from the Lycopod "phylum." Whatever the character may be worth, it favours the common origin of the Araucarian Conifers with the Cordaitean and Pteridospermic series.

The existence of the Cordaiteæ, offering clear points of agreement at once with Pteridosperms, Cycads, Ginkgoales, and Conifers, certainly suggests that all these groups ultimately had a common origin from the same great plexus of primitive Filicineæ. Ginkgo itself forms a bond of union between the Cordaitean phylum and the Taxaceæ among Conifers.

The Lycopods attained a high development on their own lines, producing seed-like organs in certain cases, and showing some anatomical analogies with Conifers. A more exact comparison appears to indicate that these characters are homoplastic [analogous], and not indicative of any real affinity with the higher plants.

NATIONAL FRUIT GROWERS' FEDERATION.

Annual General Meeting.

May 4.—The fourth annual general meeting of this Federation was held on the above date at the Royal Horticultural Hall, Vincent Square. Col. Long, M.P., took the chair at 3 p.m., and amongst those present were Major A. Griffith Boscawen, Messrs. F. S. W. Cornwallis, T. A. H. Rivers, F. Smith, G. E. Champion, W. Horne, H. F. Gething, Jno. Idiens, W. Idiens, C. H. Hooper, G. F. Hooper, R. W. Cannell, W. E. Wallace, S. Boorman, A. H. H. Matthews, P. Manwaring, etc.

The Chairman, in moving the adoption of the Council's annual report, said he thought he might congratulate the Federation on a fairly successful year's work, which, however, could have been much extended if the movement had received more support from the main body of growers. He suggested that meetings should be held at leading centres in the fruit districts such as Maidstone, Evesham, Wisbech, etc., with the double object of urging on the Government the adoption of the recommendations of the Departmental Committee on Fruit Culture, and of increasing the membership. Alluding to the Bill which had been prepared by the Joint Railway and Parliamentary Committee, he thought it could not fail to be of great service to growers, even if it did not become law exactly in its present form.

Mr. F. Smith seconded the adoption of the report, and, after a brief discussion, the motion was carried unanimously. Col. Long then vacated the chair, which was at once taken by Major Boscawen, president-elect for the ensuing year, who at once moved that Colonel Long be appointed to succeed him at the end of his year of office. This motion being seconded by Mr. A. H. H. Matthews, was carried with enthusiasm.

Mr. A. Miskin was again appointed hon. treasurer, and seven members of the Council, retiring by rotation, were also re-elected.

The meeting then proceeded to consider, seriatim, the recommendations of the Departmental Committee. These are 40 in number, and, taken as a whole, they were cordially approved by the members present, but several were selected as being more urgently needed, and these it was decided to press forward at every convenient opportunity. It was unanimously agreed that the President of the Board of Agriculture should be asked to receive a deputation at an early date, and the Council was requested to make the necessary arrangements.

ROYAL GARDENERS' ORPHAN FUND.

Annual Dinner.

May 10.—The annual Festival Dinner, in aid of the funds of this institution, took place on this date at the Hotel Cecil, Strand, and, judged by the total sum collected at, or in consequence of, that function, it must be regarded as the most successful of the whole of these annual gatherings of which that of the 10th inst. was the eighteenth. The chair was occupied by J. Gurney Fowler Esq., treasurer of the Royal Horticultural Society, and he was supported by a large and representative gathering of the horticultural world, including George Corble Esq., the Master of the Worshipful Company of Gardeners, and George Bunyard Esq., the Master of the Fruiterers Company. The dining room was transformed into a veritable floral hall, through the kindness of friends and supporters of the charity, who contributed cut flowers and foliage to adorn the tables, and groups of plants to beautify the surroundings. After the loyal toasts had been honoured, the Chairman proposed the principal toast of the evening, "The Royal Gardeners' Orphan Fund." At the outset he referred to the loss the Fund has sustained in the death of Lord Mansfield, the Chairman at the preceding dinner, a gentleman by whose influence and support the funds of the Society were greatly benefited.

Referring to the good work done by the charity, he reminded his hearers that every one benefits from the work of the gardener, and that it is to him we owe our beautiful gardens with their fruits and flowers. But in performing this work the gardener has to battle with the elements, and in doing so incurs considerable risk to his health, for he is often subjected to piercing winds and cold, after having previously been engaged in a tropical temperature indoors. Gardeners as a rule marry early, and are often the fathers of large families, which when trouble comes are cast into the world. It is then the Royal Gardeners' Orphan Fund is anxious to afford help. But the income is small and not all is done that could be wished, and he appealed to the whole of the country to do its share in the matter of subscribing to the funds. The work of the society is spread over the whole of the kingdom, and not a few of the beneficiaries are to be found in Scotland.

Mr. Ed. Sherwood, the hon. treasurer, in replying to the toast, enumerated some of the good work done by the institution, and gave a short recapitulation of its history. The society has £11,500 in investments, and besides the income derived from the interest on this money, the receipts last year included £347 from subscribers, £204 donations, and £750 gathered at the annual festival dinner, and of these sums £1,400 was distributed to orphans. Gratifying as this was, it was altogether inadequate to meet the demands on the fund, for whereas in 1900 they were enabled to elect all the nominees on the charity, there were now 21 orphans awaiting election. He reminded his hearers that the society aids the children in apprenticing them, and in many cases in providing clothes in order to help them make a start in life. He concluded by making an appeal to gardeners themselves to aid the fund, and said that if they contributed 2d. per week during January and February and 1d. per week for the remainder of the year, they would become recognised subscribers and be entitled to vote at the elections.

The next toast was that of "Gardeners and Gardening," proposed by S. Woolley, Esq., and responded to by Mr. George Bunyard, V.M.H., M.W.C.F., one of the members of the first committee of the Fund,

Mr. W. H. Cutbush proposed "The Visitors," and referred to the presence of the Masters of two City gardening companies, an event which had not been recorded before. Mr. Geo. Corble, W.M.G.C., in replying for the visitors, said he hoped also to be present another year. The toast of the "Press" was proposed by Mr. W. Bates and responded to by Mr. C. H. Curtis. The Secretary announced the result of the dinner to be a record both in attendance and in the sum subscribed, the latter totalling the sum of £1,001 15s. Among the principal subscribers and collectors were those following :—

J. Gurney Fowler, £50; Hurst & Son, 50 gns.; Leonard Sutton, £50; Messrs. Rothschild, 25 gns.; J. Veitch & Sons, Ltd., 25 gns.; Jeremiah Colman, 20 gns.; George H. Cuthbert, £27 16s.; George Cuthbert, £8 18s. 6d.; George Reynolds, £43 5s.; Edwin M. Hellier, £20; Frances Robinson, £20 10s.; Barr & Sons, £10 10s. 6d.; J. F. Mc Leod, £10 10s.; J. R. Roberts, £10 10s.; F. Noakes, £10 10s.; Baron Schröder, £10 10s.; George Caselton, £11 14s. 6d.; Whitpaine Nutting, £11; Mrs. W. G. Head, £10; T. W. Sanders, £13 0s. 6d.; R. Hooper Pearson, £14 15s. 6d. (including 5 gns. from the *Gardeners' Chronicle*, Ltd.); Jno. Lyne, £7 12s.; F. C. Fear, £8 3s.; T. A. Morris, £7 7s.; Covent Garden friends, per Mr Assbee, £200, and numerous smaller amounts.

MARKETS.

COVENT GARDEN, May 16.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Anemones (pink) doz. bunches...	1 6-3 0
— coronaria varieties	1 6 3 0
— fulgens, fl. pl.	3 0-4 0
Azalea indica., per doz. bunches	3 0-5 0
Azalea mollis, doz. bunches ...	4 0-6 0
Calla æthiopica, per dozen	2 0-4 0
Carnations, per dozen blooms, best American various ...	2 0 4 0
— smaller do. ..	1 0-2 6
— Malmaisons ...	6 0-10 0
Cattleyas, per doz. blooms ...	8 0-12 0
Dendrobium Wardianum and nobile, per doz. blooms ...	2 0-3 0
Eucharis grandiflora, per doz. blooms... ...	3 0-4 0
Gardenias, per doz. blooms... ...	1 6-2 0
Gladiolus, Blushing Bride, per dozen bunches	9 0 12 0
— The Bride ..	6 0 12 0
Gypsophila elegans, per doz. bunches ..	3 0-4 0
Iris germanica, per bunch	0 9-1 0
— Spanish, per doz. bunches...	2 6-5 0
Ixias	2 6-4 0
Lilac, per bunch ...	2 0-3 0
Lilium auratum ...	2 6-3 0
— candidum, per bunch	1 6-2 0
— lancifolium, rubrum and album	2 0-3 0
— longiflorum ...	2 0-3 0
Lily of the Valley, per dozen bunches ...	4 0-8 0
— extra quality ...	9 0-12 0
Marguerites, white, p. dz. bunches	2 0-3 0
— yellow, per dz. bunches ..	2 0-3 0
Mignonette, dozen bunches ..	2 0-3 0
Myosotis, per doz. bunches ..	2 0-3 0
Narcissus, per dz. bunches ..	2 0-3 0
— bicolor ...	2 0-3 0
— ornatus ..	1 0-2 0
Odontoglossum crispum, per dozen blooms	2 0-2 6
Ornithogalum (Star of Bethlehem) per doz. bchs	1 6-2 0
Pelargoniums, show, per doz. bunches .	3 0-5 0
— Zonal, double scarlet... ...	5 0-6 0
Primula, double white, per doz. bunches .	5 0-6 0
Ranunculus, doz. bunches .	6 0 8 0
Roses, 12 blooms, Niphetos ,...	2 0-3 0
— Bridesmaid	2 0-4 0
— Kaiserin A. Victoria	2 0-4 0
— Caroline Testout	3 0-5 0
— C. Mermet ..	2 0-4 0
— General Jacqueminot	1 0-2 0
— Liberty ...	2 0-6 0
— Mad. Carnot...	2 6-3 0
— Mad. Chatenay	3 0-6 0
— Mrs. J. Laing	3 0 5 0
Stephanotis, per dozen trusses	4 0-6 0
Stocks (double white) per doz. bunches	2 0-3 0
Sweet Peas, per doz. bunches ..	3 0 6 0
Tulips, per dozen bunches ..	4 0 8 0
— special quality	12 0-18 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0 12 0
— — medium, bunch ...	1 6-2 0
— —short sprays per bunch...	0 6-0 9
— Sprengeri ..	0 6 1 0
Adiantum cuneatum, doz. bun.	4 0-6 0
Berberis, per bunch	2 6-3 0
Croton leaves, per bunch	1 0-1 6
Cycas leaves, each	1 6-2 0
Fern, English, p. dozen bunches	2 0 3 0
Fern, French, doz. bunches ...	3 0-4 0
Galax leaves, per doz. bunches	1 6-2 0
Hardy foliage (various), per dozen bunches	2 6-4 0
Ivy leaves, bronze	1 6-2 0
long trails per bundle... ...	1 0-2 0
— short green, doz. bunches...	2 0-3 0
Moss, per gross ...	5 0-6 0
Myrtle, per dozen bunches ...	3 0-6 0
Smilax, per dozen trails	3 0 6 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Acacia armata, per dozen	9 0 18 0
Ampelopsis Veitchii, per dozen	6 0-8 0
Aralia Sieboldi, per dozen	4 0-6 0
— larger ...	12 0-15 0
Araucaria excelsa, per dozen ..	12 0-30 0
Aspidistras, green, per dozen ..	18 0 30 0
— variegated, per dozen	24 0 36 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	9 0 10 0
— tenuissimus per dozen ..	8 0-10 0
Azaleas, per doz.	18 0-30 0
Begonias (tuberous), per dozen	5 0-8 0
Boronia elatior, per dozen	18 0-24 0
— heterophylla ...	18 0-30 0
Calceolarias (Herbaceous), per dozen	3 0 5 0
— yellow	4 0-6 0
Callas, per dozen ..	5 0-8 0
Chrysanthemum segetum ..	6 0 10 0
Cinerarias, per dz. .	3 0-5 0
Clematis, per doz.	8 0 9 0
— in flower .	18 0 24 0
Crassula, hybrid, per doz.	12 0-15 0
Crotons, per dozen	12 0-30 0
Cocos Weddelliana, per dozen	9 0-18 0
Cyperus alternifolius, dozen	4 0-5 0
— laxus, per doz	4 0-5 0
Deutzias, per doz.	6 0-9 0
Dracænas, per doz.	9 0-24 0
Erica, Cavendishi, per dozen ...	24 0-26 0
— candidissima...	18 0-24 0
— persoluta .	24 0-30 0
— ventricosa magnifica	24 0-42 0
Euonymus, per dz.	4 0-9 0
Ferns, in thumbs, per 100... ...	7 0-10 0
— in 60 .	16 0-25 0
— in 48's, per doz.	4 0-10 0
— in 32's, per doz.	10 0-18 0
Ficus elastica, p.dz.	9 0 18 0
— repens, per doz.	5 0-8 0
Fuchsias, per doz.	6 0-9 0
Genistas, per doz.	5 0-9 0
Heliotrope, per dz.	6 0 8 0
Hydrangea Hortensia, per dozen	9 0-24 0
— Thos. Hogg	12 0-24 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*)

	s.d. s.d.
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen ...	12 0-21 0
Latania borbonica, per dozen ...	12 0-18 0
Lilium longiflorum, per dozen ...	15 0-24 0
— lancifolium, per dozen ..	18 0-24 0
Lily of the Valley, per dozen .	18 0-30 0
Lobelia	5 0-6 0
Marguerites, white, per dozen ..	6 0-12 0
Mignonette, p. doz.	4 0-6 0
Musk, Harrison's, per doz. ..	3 0-5 0
Pelargoniums (Zonals), per dozen	5 0-8 0
Pelargoniums, Ivy-leav'd, p.dz.	5 0 8 0
— show	9 0-15 0
Petunias, double, per doz.	6 0 8 0
— single (in 60's only)	1 6-2 6
Rhodanthe, per dz.	4 0-6 0
Rhododendrons, per doz. ...	18 0-30 0
Roses, per dozen...	12 0-18 0
Saxifraga pyramidalis, per doz.	12 0-18 0
Selaginella, dozen	4 0-6 0
Spiræa japonica, per dozen .	5 0-10 0
Stocks (Intermediate), per dozen	5 0-6 0
Verbena, Miss Willmott, per doz..	8 0-10 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples —South Australian.	
— Adams' Pearmain, per case	11 0-13 6
— Jonathans, per case	14 0-18 0
— Monro's Favourite, per case	13 0-16 0
— New York Pippins, p. case	14 0-16 0
— Rymers, per case	10 0-12 6
— Wellingtons, p. case	14 0-16 0
Nova Scotians, per barrel :	
— Nonpareils ...	22 0-25 0
— Ribston Pippin	12 0-13 6
Blenheim Pippin	18 6-21 0
— King of Tompkin's County ...	25 0 —
Canadian, per barrel:	
— New York Imperials. ..	25 0 28 0
Tasmanian :	
Ribston Pippin, per case...	16 0 —
Tasmanian case:	
— Sturmers ...	11 6-15 0
— French Crabs..	11 6-13 0
— Alfrestons ...	11 6-13 0
— Sc. Pearmains	13 0-16 0
— Prince Alfreds	12 0-13 0
N.Y. Pippins	12 0-16 0
Apricots (French), per box .	0 10-1 6
Bananas, bunch ...	
— No. 1 quality .	7 0-8 6
— No. 2 quality .	5 6 6 6
— Extra quality...	8 6-10 0
— Giants, per bunch ...	11 0-13 0
— Jamaica .	4 6-6 0
— Loose, per dz.	0 8-1 3
Cherries (French), ½ bushel	12 6-13 0
— boxes ...	1 0 2 0
Cranberries, case	13 0-14 0
Dates, Tunis, per box	4 0 —
Figs, per dozen ...	2 0-7 0
Grapes (English), Black Hambro, per lb.	2 0-3 6
— Muscat, per lb.	2 0-4 0
— (Cape), small cases	3 0-6 0
— large cases ...	10 0-12 0
Lemons :	
— Messina, case	9 6-15 6
— Naples, p. case	20 0-35 0
Lychees, per box...	0 10-1 0
Melons, each ...	1 3-2 6
Nectarines, English	4 0-12 0
Nuts, Cobnuts, per doz. lb .. .	8 0 —
— Brazils, new, per cwt. ...	42 0-48 0
— Spanish, per bag	42 0-43 0
— Barcelona, per bag ..	24 6 —
— Monkey Nuts, per bag	18 0 -
— Walnuts, dried, cwt.	35 0 —
—Chestnuts, Italian per bag ...	13 6-15 0
— Coconuts, 100	10 6-13 6
Oranges, Valentia, per case ...	11 0-35 0
— Murcia ...	8 0-16 0
— Navel	11 6-14 0
— Jaffa . .	12 0-13 6
— Jamaica ...	10 6-11 0
— Blood .. .	9 6 11 6
Peaches (English), per dozen	6 0 15 0
Pears (Cape), p. box	4 0 —
— Californian, box	8 6-9 6
— stewing varieties, per ½ bush.	2 6 3 0
— stewing, crate	10 6 —
Pineapples, each ...	2 6-14 6
Plums (Cape), per box .	10 0 —
Strawberries, p. lb.	2 0 3 0
Second quality	1 0-1 3

Vegetables : Average Wholesale Prices.

	s.d. s.d.
Artichokes, Green French, p. doz.	2 0 —
Asparagus, per bundle -	
— Toulouse .	0 9 1 3
— Montauban ...	1 0 1 6
— Barcelona ..	0 4 0 6
— Dijon	0 5-0 7
— Giants... ...	4 6-6 6
— Spanish ...	0 6 0 8
— Sprue ..	0 6-0 8
Beans, French, p. lb.	0 6
— Broad, per pkt.	0 6 —
— Broad, per pad (loose)	3 0-4 6
— Flageolet, box	1 0
— Home grown, per lb .. .	0 6 0 8
— Channel Island	0 6-0 8
Beetroot, bushel ...	0 9-1 3
Broccoli, sprouting, per bushel	1 6-1 9
— per doz .	1 0 2 0
Cabbages, Spring, per dozen ...	1 0-1 6
— red, per bushel	2 0
Carrots, French pad	3 0 —
— per bag, unwashed ...	1 3-1 6
— bag, washed ...	2 0-2 6
— new, per dozen bunches	4 0 5 0
Cauliflowers, per tally . ..	3 0-10 0
Chow Chow, p. dz.	1 6-2 0
Cucumbers, dozen	1 9-2 6
Endive, per dozen	1 9-2 0
Horseradish, foreign, per dozen bundles .	10 0-14 0
Leeks, 12 bundles	1 6 3 0
Lettuces, Cos, per dozen	2 3 3 3
— French, per dz	0 6-1 0
Marrows, per doz.	2 0-3 0
Mint, per dozen ...	4 0-6 0
Mushrooms (house) per lb. ..	0 10-1 0
— Buttons, per lb.	1 0 —
Mustard and Cress, per dozen pun.	1 0-1 6
Onions (English), bag . .	4 9-5 0
— Valencia, case.	10 0 –
— pickling, per bushel . ..	3 6-4 0
— French, ½ bag	2 3 —
— Spring, dozen bunches ..	1 6-2 0
Parsley, 12 bunches	1 0-1 6
Peas (French flats)	3 0 4 0
— English, per lb.	0 6-1 0
— Channel Isl'nds	0 6-1 0
Potatos (new) :—	
Canary, cwt....	11 0-14 0
— Channel Island Kidneys	0 2½-0 3
Rhubarb, per doz. bundles .	2 6 -
Spring greens, per bushel	1 0 1 3
Salsafy, per dozen bundles ..	4 0 -
Sea Kale, p. punnet	0 9 —
Tomatos :—	
— Foreign, bundle of 4 boxes .	15 0-20 0
— English, per lb.	0 6-0 8
— small selected	0 5-0 7
Turnips, per doz. bunches .	1 0-1 6
— bags ..	1 0
— new, per dozen bunches	5 0-7 0
Turnip Tops, bush.	1 0-1 6
Watercress, per doz. bunches ..	0 4 -

Remarks.—The first French Cherries of the season have arrived. Oranges are arriving in a bad condition. Imported Apples are arriving in better condition than of late, and are realising good prices. Strawberries are still abundant. Supplies of Cape Grapes will finish this week. French Asparagus has been and is very cheap owing to the English-grown being in the market contemporaneously. Trade generally has improved somewhat.—*E. H. Rides, Covent Garden, Wednesday, May 16, 1906.*

Potatos.

Blacklands, 70s. to 75s.; Lincolns, 70s. to 80s.; Scotch Greysoils, 60s. to 65s; Dunbars, 85s. to 90s. per ton. Canary New Potatos, 12s. to 14s. per cwt.—*John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

The season for the sale of bedding plants is now at its height. In the London district much of the bedding stock is grown in 48 pots, but in the country 60 pots are used. Zonal Pelargoniums are now remarkably good, in both 48 and large 60 pots. Among the best sorts are Mrs. Brown Potter, a very fine pink variety; Mrs. H. Cannell, salmon; Snowflake, the best single white; Gloriation, scarlet. In Fuchsias is seen nothing new. The same may be said of Show Pelargoniums. Good plants are seen of the old and popular sorts, but they do not sell so well as they formerly did. Ivy-leaved Pelargoniums are in much demand. Well-grown plants of Galilee were making 18s. per dozen this morning. Autumn-sown Mignonette is not quite so plentiful, but spring-sown plants are coming from several growers, and, although not far advanced, it is useful for boxing and bedding work. Best plants of Verbenas, Miss Willmott and Scarlet King, keep up best prices, but others are sold very cheaply. Mr. Sweet is marketing an especially good variety of yellow Calceolaria, which obtains 8s. per dozen, but ordinary sorts do not realise more than 4s. or 5s. per dozen. Chrysanthemum segetum, in single and double forms, are now very good. Nice specimens of Heliotrope are seen; some growers have excellent unnamed seedling varieties. Lobelia in flower is plentiful. One grower informs me that during the past two or three years he has found a difficulty in keeping Emperor William, the favourite market variety for many years. The double blue variety will, I believe, make a useful market kind. Good double Petunias in 48's realise from 6s. to 8s. per dozen. It is remarkable the quantities of single Petunias in 60 pots that are sold. The growers all appear to have a special strain of their own. Harrison's Musk is not in such great demand as formerly, and prices are low. Rhodanthe is over-plentiful. Marguerites can be had in all sizes. Cinerarias are still plentiful, and have little demand. This morning I noticed some pleasing plants of Hydrangea Mariesi with a blue tint in the flowers. Several growers have H. Hortensia of a blue shade, but it is questionable if it is decided enough to be appreciated. Trade in Ferns and other foliage plants varies little, and does not satisfy growers. I think, however, that in the near future small palms will become dear, as seeds are becoming scarce.

Cut Flowers.

Daffodils are almost over for the season, but we now see a glut of Spanish Irises. Rose-growers are still having a bad time of it. I found at closing time this morning large quantities of blooms remained unsold. Some beautiful specimens of Boule de Neige were making but 2s. 6d. per dozen. Supplies of Liliums are still excessive. Lily of the Valley is not quite so plentiful. Consignments of Callas are becoming less, but there are sufficient to prevent any advance in prices. Sweet Peas were never so plentiful at this season of year. Gladiolus The Bride is good, but the imported bloom detracts from the value of the home-grown flowers. Large quantities of Odontoglossum crispum remained on the stands at closing time. Carnations are plentiful and good. Cut foliage of hardy subjects is now mostly the soft spring growth. Asparagus, Smilax, Maidenhair Fern, etc., are all well supplied, and in bronze foliage the Galax leaves are most useful. *A. H., Covent Garden, Wednesday, May 16, 1906.*

Obituary.

John Barron. In our last issue we briefly announced the death, on May 7, of Mr. John Barron, of the firm of William Barron & Son, landscape gardeners and nurserymen, Elvaston Nurseries, Borrowash, near Derby. Mr. John Barron was born on June 8, 1844, at Elvaston, where at that time his father, William Barron, was agent and gardener for the 4th Earl of Harrington, and was the greatest authority on coniferous plants and on the removal of large trees. In 1851 Mr. Barron commenced business as a landscape gardener and nurseryman, and in 1865 he was joined by his son who had been studying landscape gardening abroad.

In 1886 Mr. Barron, sen., retired from the business, and from this date Mr. John Barron carried it on. Mr. John Barron, like his father, has always been a successful transplanter of large trees, the most notable of which, since he in conjunction with his father successfully moved the Buckland Yew near Dover (which was 1,100 years old and mentioned in the Doomsday Book), was the John Knox Yew at Longbank, Scotland. Under this Yew tree it was that John Knox administered one of his first sacraments. In the way of laying out parks, &c., public and private, perhaps his most notable work was the Abbey Park, Leicester, which was transformed from a bog to one of the most up-to-date public parks out of London. Mr. John Barron was also well known in the agricultural world, and besides being a very keen judge and breeder of shire horses his name was generally in the prize list at one of the leading shows.

Rev. James Morison Crombie, F.L.S.—This gentleman, who died on May 12, at Ewhurst, Surrey, aged 76, was one of the few students of Lichens in this country, but we believe that up till the last he refused his assent to the opinion that Lichens are of a dual nature, partly fungal, partly algal. His best-known work is "A Monograph of Lichens found in Britain, 1894."

Mrs. H. B. May.—We understand that the funeral of Mrs. H. B. May, whose death is recorded on page 312, will take place on Saturday, May 19, at 3.30 p.m., at Lower Edmonton.

ANSWERS TO CORRESPONDENTS.

Beech Trees: *Gardener*. Your trees are affected with the "Coccus" scale, to which Beech trees are very liable. When the tree is quite young and small, you can get rid of it by the use of petroleum emulsion, and by the vigorous application of a scrubbing brush. But if the trees are large you can do nothing.

Begonias: *J. W.* The leaves are affected with mites and thrips. Try washing the plants with tobacco water and get fresh soil or bake the old to sterilise it.

Carnations: *A. H. M.* The plants have been potted too deeply and have rotted accordingly.

Corrections. Owing to an oversight, part of p. 300 was printed without the necessary corrections having been made. Cattleya Schröder should be C. Schroderæ; Kochia sooparia should read K. Scoparia. Dr. Stapf informs us that he will shortly oblige us with an article on this latter plant.

Cucumbers: *G. M.* Send us a sample of the roots and foliage and we will endeavour to ascertain the cause of injury.

Gooseberry Caterpillar: *T. W. G.* The larva of the Gooseberry moth Abraxas grossulariata.

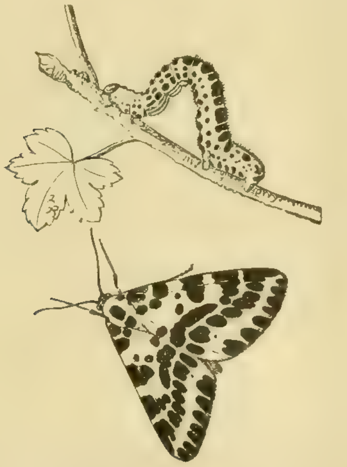


Fig. 128.—The gooseberry caterpillar and moth, Abraxas grossulariata.

Insects in Cucumber Beds: *H. B.* The little white insects you send from your Cucumber beds are immature specimens of one of the Poduridæ or "Springtails," but they were so battered in transit that it is impossible to say to what genus or species they belong. The soil should be thoroughly sterilised by baking. The woodlice were probably the cause of more injury to the Cucumber plants than the "Springtails."

Lily of the Valley: *Miss P.* We believe your plants have suffered from some climatic change which has impeded proper growth.

Market Prices: *E. A. D. W.* We believe the firm you have mentioned does a very good business. In regard to your returns not being equal to our priced list, it may be useful to point out that the prices given are those obtained for best quality blooms, and are average prices. We could better judge of the value of your produce if you would send us a sample as you pack them for market. Considering the over supply that has been sent to market, the price you name for Enchantress is very fair, but that given for Princess of Wales appears low. All market nurserymen should occasionally visit the market and judge of the quality of the goods for themselves. Great difficulty is often caused by the over supply, and those who receive flowers to sell on commission have had a difficult task to obtain satisfactory prices during the past few weeks.

Mushroom: *E. D.* The malformation is due to a weaving together of the hyphae, or threads, of the one carpophore with the other, bringing about a complete union of growth between the two, although they both started independently. We have figured similar cases in our pages.

Names of Plants: *W. T.* Staphylea pinnata and Amelanchier vulgaris.—*A. McL.* Lælia purpurata. It varies considerably in colour. Yours is a good white petalled form —*J. W. M.* 1, Claytonia perfoliata; 2, Chærophyllum silvestre; 3, Alliaria officinalis.—*Glasgow.* 1, Amygdalus nanus; 2, Too shrivelled to recognise, send later; 3, Berberis stenophylla; 4, Ligustrum japonicum; 5, Rhododendron myrtifolium; 6, Forsythia viridissima.—*R. McIntosh.* Lotus Peliorhyncus, a native of Teneriffe.—*E. B., Worthing.* Ribes aurea.—*Orchids.* 1, Epidendrum Stamfordianum; 2, Epidendrum alatum; 3, Brassavola nodosa grandiflora; 4, Dendrobium chrysanthum; 5, Phyllanthus angustifolius, often called Xylophylla elongata in gardens.—*Manor.* 1, Sedum Sieboldii; 2, Dicentra eximia; 3, Alyssum saxatile; 4, Iresine Herbstii and Iresine Herbstii aureo-reticulata; 6, Chlorophytum elatum variegatum.—*A. McK.* 1, Dendrobium chrysotoxum; 2, Dendrobium Pierardi.—*C. A. R.* 1, Masdevallia simula; 2, Masdevallia caudata; 3, Trichopilia laxa; 4, Stelis ophioglossoides; 5, Epidendrum glumaceum; 6, Epidendrum elongatum; 7, Sophronitis cernua.—*A. Y. L.* 1, Epidendrum fuscatum; 2, not yet identified; 3, Saccolabium ampullaceum.—*J. H. G., Wicklow.* The flower sent is a very good form of Lælio-Cattleya Aphrodite (L. purpurata × C. Mendeli.—*B. A.* 1, Oncidium Wentworthianum; 2, Vanda cœrulescens; 4, Selaginella viticulosa.—*Campden Hill.* Pyrus (Sorbus) pinnatifida.—*H. H.* Darmstadt. A form of Prunus Padus. There is in English gardens a form called P. Padus Alberti, which differs only in size of flower. Your specimen may be of that variety.—*O. A.* Amelanchier vulgaris.—*F. C.* Asphodelus luteus. We have no time to waste over such miserably inadequate specimens. If you send them in flower we shall be pleased to help you.—*E. B.* 1, Cupressus Lawsoniana; 2, Thuya japonica; 3, Cupressus Lawsoniana; 4, Kerria japonica; 5, Prunus Padus; 6, Spiræa arguta; 7, Berberis vulgaris.—*F. H.* 1, Leucoium vernum; 2, Berberis buxifolia; 3, Spiræa Thunbergii; 4, Prunus sinensis, double flowered variety.—*W. P.* Larix europœa.—*G. F. T.* Daphne Laureola.—*L. S.* Cœlogyne cristata. This may be potted now; give a good supply of rain water till the growths are finished.—*J. C., Micheldever.* Prunus Padus.—*Miss L.* Narcissus biflorus, not a reversion, but a true species, wild in some counties of England.—*C. G.* 1, Smyrnium Olusatrum; 2, Chærophyllum silvestre.—*T. B.* 1, Halesia tetraptera; 2, Abies nobilis; 3, Picea Morinda alias Smithiana; 4, Variegated form of Cupressus Lawsoniana; 5, Cupressus sempervirens; 6, Cephalotaxus Fortunei; 7, Cupressus Lawsoniana variety.

Nectarine: *J. W. N.* The injury is due to a typical example of gumming. The cause of this disease is obscure; lifting the tree and adding lime to the soil has, in some instances, produced beneficial results. We reproduce, at fig. 129, an illustration published some years ago in these pages.

Pæony: *J. L.* The buds have rotted, perhaps from drought at the roots. We do not see any trace of the fungus which is so destructive to these plants.

Palestine Rose: *Mrs. B.* The Rose you mention is probably Rosa lutea, of which the Persian Yellow is a cultivated form.

Peaches: *E. P.* Shothole fungus. See Answers to Correspondents in last week's issue.

Pea: *F. F.* What you send is a fasciated variety known as the "Crown Pea." The mummy story is a myth.

Plum: *W. D.* The tree has the silver leaf disease, often described in our columns. We agree with your treatment as on the whole the best plan to be adopted.

Privet Hedge: *Hedge.* You had better consult a local solicitor unless a pacific arrangement can be made which would be more satisfactory.

"Tatur Disees." The book noticed in our last issue may be had post free from the author, C. T. Druery, Esq., Moorgate Street Chambers, E.C., at a low price.

Tomatos Diseased: *M. O. U.* The disease is fungoid, caused by Cladosporium fulvum. Dress the plants with Bordeaux mixture (see p. 136 of the *Calendar of Garden Operations*), and afford more ventilation to the house in which they are growing.

Tulips Diseased: *J. J.* The plants are affected with a fungus Botrytis parasitica, often described in our Answers to Correspondents columns. Burn all diseased plants and plant in a fresh quarter another year.

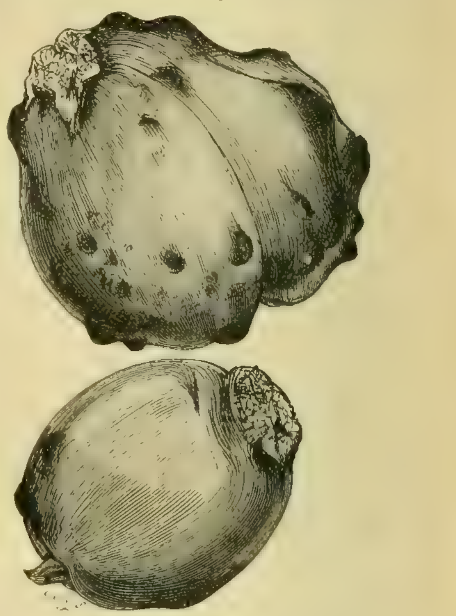


Fig. 129.—Nectarines diseased through gumming.

Vegetables and Salads for Exhibition in August: *Correspondent.* The following selection of eight kinds of vegetables is recommended to you, and we have mentioned a good variety of each kind:—1, Cauliflower, Autumn Mammoth; 2, Celery, Dobbie's Invincible White; 3, Leek, the Lyon; 4, Onion, Ailsa Craig or Cranston's Excelsior; 5, Carrot, New Red Intermediate: 6, Potato, Windsor Castle; 7, Runner Bean, Carter's Emperor; 8, Pea, The Gladstone. For a collection of salads you might select as many dishes as you require from the following:—Cucumber, Sutton's Epicure; Lettuce, Superb White (Cos); Radish, Round White; Tomato, Polegate (choosing medium-sized fruits); Mustard and Cress; Onions, White Queen (small growth); Endive, Batavian; Celery, Sutton's Dwarf Gem; Corn Salad; Mint; Sorrel.

Vine and Peach leaves injured: *Derby.* We find no trace of fungus disease on the vine leaves, but the appearance points to injury from scalding, such as would be caused by syringing with a strong solution of some insecticide. Fir-tree oil used in a concentrated form upon the young leaves would be sufficient to account for the damage. The Peach leaves have been burned by the sun. Moisture has condensed on the tips of the leaves and has acted as a lens in concentrating the rays, hence most of the injury is found at the apices of the leaves.

Vines: *J. S. B.* The leaves are scalded when moist by the sun's rays, ventilate more freely when circumstances permit.—*J. H.* Your vines have been checked in their growth and there are signs of insect mischief, but without further information we cannot tell you the cause.—*F. G. B.* Your vines are in a bad state—the berries are spotted and shanked and the leaves are also diseased; examine the border, for trouble at the roots appears to be the cause of failure.

Communications Received.—C. H. P. C. W. D.—S. M. B. A. B. Brixton, next week.—S. C., next week.—G. W. R. —J. W. N.—R. B. R.—H. D. S.—E. H.—H. N.—S. C.—A. C. B.—J. D. G.—T. H. S.—C. H. P.—J. J.—S. A.—H. W. —W. H. S.—J. W.—Mc. H.—H. F.—Mc. Millan—T. H.—J. H. V.

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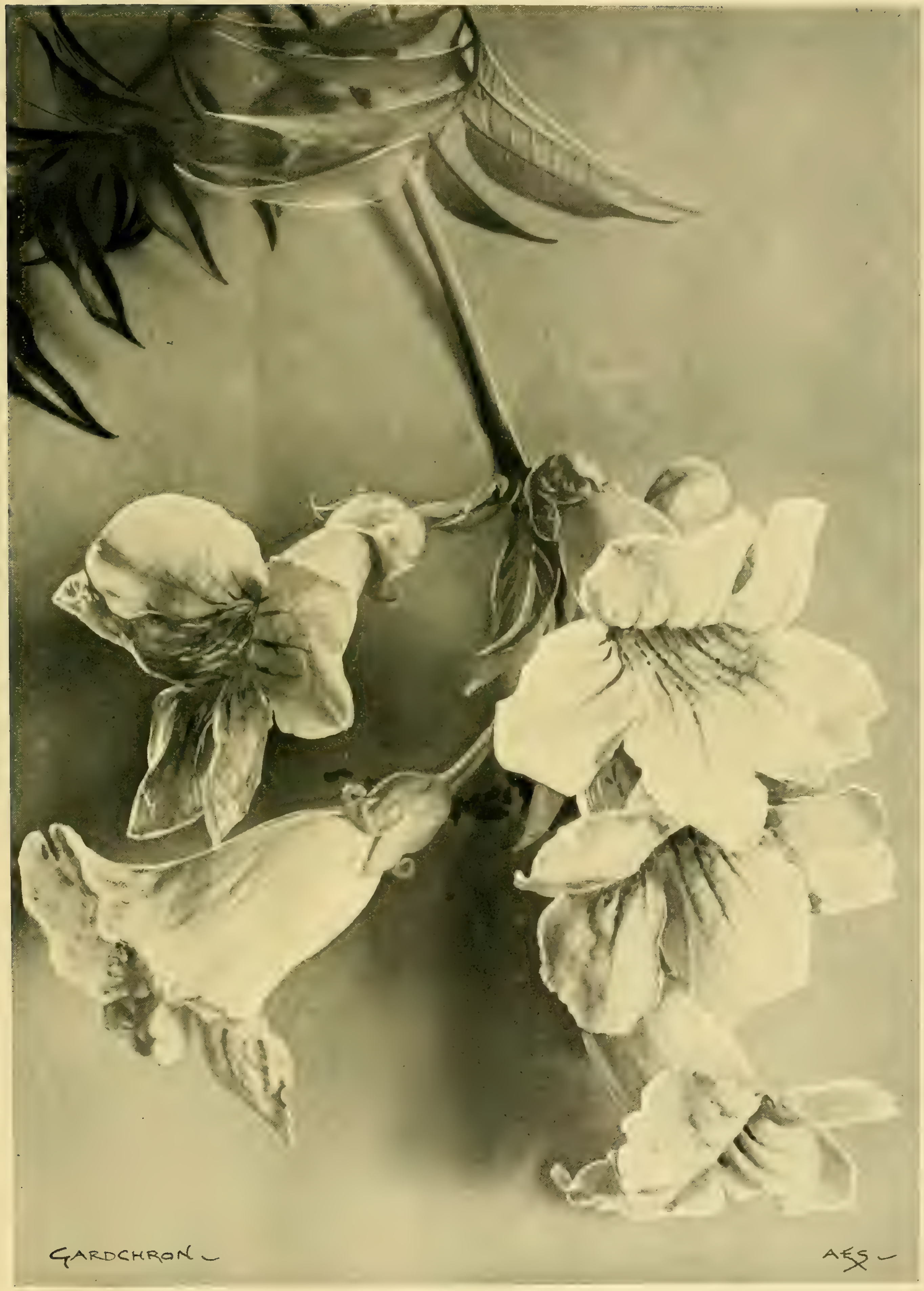

From a photograph supplied by Dr. Franceschi

A NEW SPECIES OF TECOMA FROM RHODESIA.
(T. REGINÆ SABAE. FLOWERS LIGHT ROSE NETTED WITH CRIMSON, THROAT YELLOW.)

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THE
Gardeners' Chronicle
No. 1,013.—SATURDAY, May 26, 1906.

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SPRING FLOWERS IN THE WESTERN HIMALAYAS.

THE first flowers of the year are always welcome, but especially so to those who dwell in the dried-up plains of India. Imagine the delight of finding oneself in the mountains, with spring just waking trees and plants to life, after their long sleep under the winter snows.

We were lucky enough to be in the Himalayas at the very commencement of April. On April 4 we arrived at Dalhousie, which is some 6,500 feet high, and found the snow still lying thickly on the north side of the hills. It was really winter yet, and the banks were innocent of flowers and Ferns—the paths were strewn with dead leaves.

Some few days later we left Dalhousie and marched to Chumba by the low road—the other two were not open yet, being still blocked by snow or landslips.

As we descended the mountain sides, and walked through the valleys, we were delighted to see flowers peeping out here and there. Almost our first was a shrub with a brilliant yellow flower (Reinwardtia trigyna); then, still lower in shady places by streams, we found a pretty little rock plant with cuplike yellow flowers. I have not been able to identify this latter. It was on our first day's march to Battree that we found these two.

On the way from Battree to Chel we had to climb up a bare rocky hillside, the path leading over a col, to the other side of the mountain range. Here a glorious sight awaited us—a splendid panorama of the mountains covered with snow, beyond the Ravee River opened in the distance, while all the mountain side we stood on was clothed with Rhododendrons in bloom (R. arboreum). They grow to the size of trees, with gnarled trunks quite 18 inches in diameter; the flowers are very large, cherry red, and are borne in great profusion. I have never seen anything like the show of colour on that hillside, unless, perhaps, it were the Azaleas in bloom on the banks of Lake Chusenzi, in Japan.

From Chel to Chumba we had a very varied march, sometimes climbing bare, rocky hills, at other times following the course of a stream through narrow valleys, and eventually gaining lower altitudes, with villages, the little wooden houses nestling among fruit trees—Pear trees, white with blossom (Pyrus lanata), and Apricots, a mass of pink (P. armeniaca), just as are the villages of Somerset or Devon.

Here we found many more flowers. In a shady spot by a stream Begonias grew, with waxy, pink blossoms. Purple Iris, too, appeared in vigorous clumps; these were sweet-scented, and a very dark purple. I cannot discover the name, as Collet does not mention them in his "Flora Simlensis." [Two species are mentioned in that book—I. nepalensis and I. kumaonensis—both with lilac flowers.]

Among the Barley fields on a level bit of the Ravee River grew some very pretty mauve Lilies (L. Thomsonianum), their long trumpet-shaped flowers showing up well against the young green.

Tulips, too, were flowering by the side of the paths white, with pink stripes outside, the inside being tinged with yellow (Tulipa stellata). They were very fine, almost as large as garden Tulips at home.

After a few days spent in Chumba town, we walked up the Sao valley by the river bank, and ascending to a plateau some 300 feet above it, we pitched our camp within sight of the snow mountains. On the march there we found things were more forward—the fruit blossom was nearly over, and the Barley well in advance of the fields near Dalhousie.

By the side of the path grew very large Buttercups (Ranunculus hirtellus), and the banks were literally covered with the yellow flowers of the Potentilla Kleiniana and a very fine Geranium of a particularly brilliant shade of pink, with a dark spot in the centre of the flowers (G. ocellatum).

On ascending to the plateau, the flora changed again, and we found some of our old friends, the Tulips, and Iris; also a mauve Lilac. We camped under Pear and Apricot trees still in bloom, while the grass round was thickly strewn with pale mauve Violets (scentless), Potentilla, and two kinds of Vetch—a very bright red, and yellow varieties (Lathyrus sphæricus and L. Aphaca).

After a couple of weeks spent at Sao village it became warmer, and we found that we must shift camp to higher ground; so we followed the river some five miles towards its source, and camped by its banks in a wood—1,000 feet higher up than our last resting place. On our way there we came across large bushes of Spiræa growing by the water edge (S. sorbifolia), still covered with the withered blossoms of the previous year. Our wood was only just waking up. Ferns peeped out of their coverings of dead leaves, and many of the trees were but putting forth their first young shoots.

But as the days went on, things changed visibly—Violets carpeted the ground, together with Potentilla. Under fallen trees and moss-covered rocks, Maiden-hair Fern abounded, together with another Fern which must resembled it, but was larger and coarser. A species of Asparagus, too, bracken, and many of our own favourites clothed the slopes.

During May we had quite hot weather, though a delicious breeze off the glacier at the head of the valley made it very pleasant; and then we had quite a number of surprises. A knotted old tree covered itself with blossom and proved to be Honeysuckle (Lonicera quinquelocularis); it seemed so strange to find it a tree, and not climbing as at home. Feathery Bamboo grew in clumps wherever they could get foothold (Arundinaria falcata), and formed a very pretty undergrowth. In a shady ravine a large flowering Clematis montana spread its snowy blossoms in sheets of white, twining and festooning itself over everything. The river banks and grassy hillsides were studded with well-grown bushes of Berberries, the flowers hanging in rich profusion and making gay spots of colour (B. aristata). Deutzia staminea also abounded, and the sweet-scented Philadelphus coronarium.

Some hundreds of feet above our camp, on the higher slopes of the mountain, grew sweet-scented Violets, of a very dark purple colour (V. Patrinii); also a sweet little Primula, which ranged in colour from pale pink to deep red (P. denticulata).

A mauve flower like a sweet Sultan was to be found, but I do not know its name; neither can I trace a shrub with a pink flower close on the stem, which appeared before the green leaves. It was very like a Daphne. Just beyond our wood, a high rocky cliff descended abruptly to the rim. Here we could see Indian chamois (gooral) leaping from ledge to ledge, feeding on the young grass that grew in the crevices. There were vivid patches of yellow, showing up well against the brown rock. These consisted of great clumps of St. John's wort (Hypericum lysimachioides), and others of bright purple-red were Indigofera Gerardiana.

Higher up in the mountains grew a tree, with deep yellow flowers, very sweet scented; it had thorns too, and was very much like an Acacia, but I am not certain. (Query: A. Farnesiana?)

The Roses in our wood grew to an enormous height. They were standard trees with great trailing branches covered with clusters of flowers—about twenty or thirty in each; the flowers were large and sweet-scented (R. moschata).

On June 4 we left a wood and retraced our steps to Chumba. On the way we noticed masses of Jasmine, both yellow and white (J. humile and J. officinale), with a very powerful scent like a Gardenia; Roses, of course, in profusion, and tall bushes of Pomegranate, covered with scarlet flowers.

The Spiræas (S. sorbifolia) that we had seen on our way up were also in bloom—great clusters of white flowers. I think they were finer than any cultivated ones I have seen at home.

We stayed a couple of days in Chumba, but it was intensely hot and we were glad to move to Khajiar, a little valley in the mountains at a height of 7,000 feet, surrounded by Deodars. We had a very steep pull up. We had to ascend some 5,000 to 6,000 feet, so naturally we found a great variety of flowers that day. As we reached cooler climes we met the purple Columbine (Aquilegia pubiflora), with very large flowers; a great many Dandelions (Taraxacum officinale), not beautiful exactly, but welcomed gladly as old friends; plenty of Primulas, Salvias (blue), and quantities of the mauve-purple Indigofera.

The valley of Khajiar is covered with fine short grass like a lawn at home—eaten down by the numerous herds of cattle, as it was good grass with plenty of Clover in it (T. repens).

The trees were magnificent, Deodars and various kinds of Pines. On June 20 we left Khajiar and bade adieu to our camp life, as the rains were threatening and we had to take refuge in an hotel at Dalhousie. The walk was beautiful through shady woods, and fairly level. At about 7,000 to 8,000 feet we met a peculiar Horse Chestnut tree—Æsculus indica, I think it was. The trunk was formed of scales lapping over each other, after the manner of an Armadillo—quite unlike any I have seen before.

There were a good many Colombines and Indigofera, also a tiny flower like a Michaelmas Daisy (Aster molliusculus). Another mauve-pink flower proved to be Gerbera lanuginosa.

As we commenced the descent to Dalhousie we came to a grassy slope absolutely covered with Anemones—white, and white tinged with blue outside (this latter is A. obtusiloba); but I cannot find the name of a very pretty blue Anemone that grew in the same place. The rocks were overgrown with a white flower like Arabis—which was really a Gypsophila—and another small mauve flower (Micromeria biflora). At Dalhousie we found another rock plant with a round ball-like pink flower, Polygonum capitatum. On the way we also saw a large white Potentilla with a sweet scent (P. Fragarioides), a yellow Oxalis, and a mauve flower very like a Verbena (Androsace lanuginosa). A bright pink Rose we saw half-way down, with a single flower, on a small bush rather like a briar.

I forgot to mention while we were encamped in our wood, very high up among the topmost slopes, we came across a blue Salvia (S. Moorcroftiana); also a yellow Aconite (A. lycoctonum), and a very brilliant blue Delphinium denudatum, which was a thing to be remembered. *M. Gordon.*

THE ROSARY.

MARECHAL NIEL.

This fine rose was used for covering a pillar 15 feet high in the conservatory here for many years, and it made a magnificent show in April and May, filling the house with its rich fragrance. It was budded on to an old Banksian rose which had been planted in a hole made for the iron pillar in the paved floor, under which the roots wandered away completely out of control, and it was always a mystery how they obtained sufficient nourishment and moisture for the exuberant growth annually produced. The Marechal Niel bud was inserted in a young shoot, a little thicker than a lead pencil, in the spring, when the bark parted readily from the wood. Growth was very vigorous, and as soon as the flowering period was over it was cut hard back. The next pruning was given in the following winter, when the weaker shoots were thinned out and those that were left for producing the bloom pinched. When the flowering season came round every bud on these produced a flowering shoot. It was at its best in the third and fourth years, 300 blooms being counted on it at one time, but, after that, canker became serious and it was usually cut down in the fifth or sixth year and the stock budded afresh. Now the old Banksian serves as a stock for a Gloire de Dijon, which has been blooming profusely for some weeks past, and by judicious pruning and thinning another crop of bloom can be obtained in August, the time they are most wanted in bloom here. *M. McN., By Greenock, N.B.*

TULIPA FOSTERIANA.

This beautiful species is one of the many Tulips which have recently been introduced from Bokhara by Mr. C. G. Van Tubergen, jr. It was first shown at a meeting of the Royal Horticultural Society, on April 25, 1905, by Miss Willmott, of Warley Place, Essex, when an Award of Merit was given to it. At a recent meeting of the same society, it was again exhibited in fine condition. The accompanying illustration at fig. 130, is from a drawing made by Mr. Worthington G. Smith, from flowers sent to the Editor by Mr. van Tubergen. The flowers are of very large size, and of a rich, intense, glowing, crimson colour, with a darker blotch at the base of the segments. It is a welcome acquisition to an already numerous and popular family of garden bulbous plants. Like T. Tubergeniana, this species has a certain affinity with the older T. Eichleri, but it is distinct enough for garden purposes. Of robust habit, and as easily grown as many of the other brilliant species from this part of Eastern Turkestan, T. Fosteriana will probably become a favourite plant when more common. *W. I.*

WATER GARDENS.

(Continued from page 292.)

Plants for the Banks of Lakes.

The higher banks of lakes are often furnished with a type of vegetation not wholly in accord with their surroundings. Plants like the Sea Buckthorn, Hippophae rhamnoides, Spiræa Lindleyana, Catalpas, Magnolias of the Yulan type which never look so grand as they do when by the waterside; the weeping Ash and Willow, Bamboos of the Phyllostachys group, a clump or more of the Moonlight Broom, Cytisus scoparius sulphureus, and others of Cytisus præcox, can be used with advantage, for many of these will help to furnish a display of interesting flowers and foliage in early summer time. Here and there a grouping of Larch in the background will reveal wonders in leaf colouring, seen in contrast with the bronze tints of Oaks in spring. Such trees are often objects of great beauty when grown quite close to the water's edge, and they are, moreover, suitable in conjunction with the common Bamboo and Taxodium distichum for concealing the source of the water supply of the lake, and works incidental thereto.

The grouping of plants at the water's edge calls for considerable care. Nothing short of bold grouping will suffice; and if one starts with groups of a few of the many very elegant grasses, they will help to make the water scene appear natural. Arundo Donax—the tallest reed, Arundo conspicua—a refined "Pampas" grass, the Bocconias or Plume Poppies, the Ferulas, the Miscanthus, Phormiums, Bamboos, and many others, will thrive well in places subjected to occasional floodings without receiving harm, and will do without much attention when once they become established. These represent the noblest grasses and foliage plants the water garden can possess, and each species is effective either when isolated or with lesser plants around them. Acorus calamus, an Iris-like plant for a sheltered position, will enjoy a swamp. Gunneras manicata and scabra delight in a rich root run with moisture at the bottom, and should occupy a position on a grassy slope, dipping to the water's edge, or placed on a promontory to accentuate a break in the water's margin. Give these plants isolated positions worthy of their grandeur. The best of the Polygonums, such as Weyrichi, chinense, and the better forms of cuspidatum, sphaerostachyum, etc., whose flowers are developed in Spiræa-like sprays or plumes, are eminently fitted for planting by the water's edge. They need ample room for their development, but they are wortny the space they occupy, for their foliage is handsome all through the summer, while their flowers are splendid in early autumn. These plants are effective also when associated with deciduous trees and shrubs, and they will exist under conditions unfavourable to the majority of other waterside plants, and in addition to their use as ornamental subjects, they often serve a useful purpose in holding up banks that the water would otherwise fritter away. Polygonum sachalinnse, well described by a friend of mine as a "big tramp," is a desirable subject for its giant growth alone; its 10 feet high arching rods are laden with ample leaves at midsummer, and it should occupy a position in any water scene of magnitude.

Flowering Plants.

Irises, ranging from our native species to the glorious Japanese Flags, offer a great selection of waterside plants. Much controversy has taken place as to the requirements of what are known as the tall, beardless Flags, but one has only to see them in groups by the waterside to realise their needs. They delight in a soil of the richest possible character, and they are not inconvenienced if their stems are partially submerged during certain periods of the year, nor if they are grown without water entirely, save that derived from the ordinary rainfall. Iris aurea, I. Monnieri, I. gigantea, I. spuria, and hybrids between all these four species are of this description. They range from 4 to 6 feet in height, and their leaves resemble those of the giant Reed Mace; indeed, they are similar habited plants to Typha. Another section of Irises for the waterside includes I. Delavayi, all forms of I. Kæmpferi or lævigata, and they are legion; the Siberian Iris, Iris versicolor and its forms, I. cristata, and others rare and good. The Japanese Irises embrace at least 50 varieties that are unequalled, perhaps, by any other species in this fine group. They thrive well when planted in mud, exposed to full sunshine, and should be raised half a foot above the water level. They should, I think, be grouped alone. The other grassy Irises are effective grown in masses, either as a collection of species intermingled, or forms of one species in each group; they may always be planted with a free hand in any waterscape without fear of over-planting, as they add materially to the beauty of the water's margin in the months of July and August, whilst their foliage is an ornamental feature throughout the whole growing season. Another group of handsome plants for the large lake comprises the Spiræas, Astilbes, and Cimicifugas. Reviewed collectively, they represent the choicest of flowers for our purpose. Their foliage is elegant in the extreme, rivalling that of many Ferns; and their inflorescences are unsurpassed for their wealth of soft colouring that is peculiarly fitted for waterside display. Chief of the Astilbes is the new Davidii, a bold columnar plant that should be planted in a setting of Astilbe "Silver Sheaf," and exposed to the strongest light in order that the quaint colouring of its plumes may be rendered more appreciable. Astilbe rivularis, Thunbergi, Chinensis and its forms, and the hybrid, "Snow Plume," are other good examples of a pretty race. These plants revel in the leafy deposits of ponds, consequently sites prepared for them should contain plenty of leafy material; none, however, appreciate frequent submersion of the root-stock. The Cimicifugas are a race of quaint plants, whose flowers are arranged in numerous cylindrical spikes of considerable length. Their foliage resembles that of Astilbe, and their cultural requirements are identical with those of these plants. They appear at their best when massed together and isolated from other types of vegetation. All the species are white flowered. Spiræas are a more varied group. Chief of these is the giant S. Kamtschatkaensis or gigantea—a splendid plant, growing 2 or 3 yards high, with stout stems, giant Sycamore-shaped leaves, and flattened creamy plumes each forming dis-

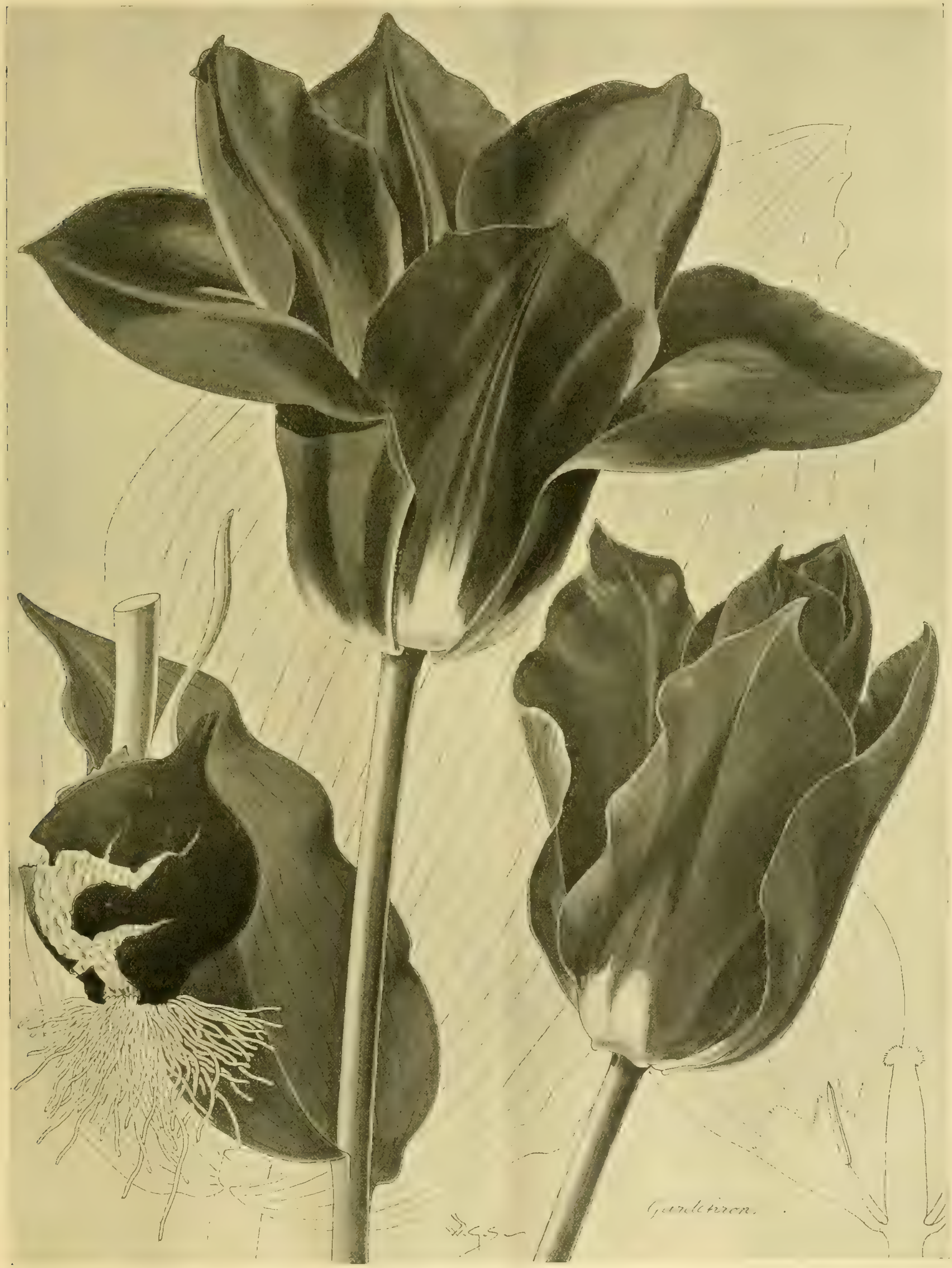


Fig. 130.—TULIPA FOSTERIANA, A NEW SPECIES FROM BOKHARA; COLOUR OF FLOWERS GLOWING CRIMSON.

tinct and handsome features. This plant should be isolated from other subjects, and grouped in numbers to get the full benefit of its noble habit; Spiræa venusta, a lovely pink-flowered species, in habit akin to the common Spiræa Ulmaria, and S. palmata and its forms, alba and elegans, in rich pink, white, and silvery pink colours respectively. The foregoing can all be planted freely at the water's edge, in just those positions where the common Spiræa is found wild. They are benefited by plenty of moisture, and are capable of presenting many pleasing effects when grouped among common Rushes and slow-growing shrubs in the most informal way, and as far from the water's edge as the planter pleases to place them, provided there is always plenty of moisture at their roots. The free use of Funkias such as F. Sieboldi and F. Fortunei, whose leaves are massive and coloured glaucous green, affords welcome clumps of cool-looking leafage that will destroy any pretentions of a flower border where much colour is used, and one cannot have too many such plants in goodly "breaks" wherever the planting of gaudy subjects has been done in excess. Gillenia trifoliata is one of the prettiest shrubs for a small group. Its flowers and leafage are small, but the growths have that pretty, "twiggy" character that one always welcomes as a foil for the bolder type of waterside plants. Other flowers suitable for the water's edge include the Willow Herbs and Loosestrifes, of which there are many wild examples and numerous improved garden forms, but they must be introduced sparingly or they will spring up in every direction and dominate everything else. The white form of Epilobium angustifolium, Lythrums virgatum and roseum superbum, Lysimachias, clethroides, barystachys, japonica, and verticillata are all good for this kind of planting. Three good Lilies lend themselves for waterside planting wherever there is a good leafy soil or peat, viz., L. pardalinum, L. canadense, and L. superbum. These are too slender in their growths to withstand much buffeting by winds, etc., but if they be planted in a setting of Gillenia they will derive sufficient protection, and their presence will help, in a great measure, to give a different aspect to portions of the water garden. Primula japonica, and P. sikkimensis thrive in any cultivated ground, but they are hopelessly incapable of succeeding when entangled with other plants, Smilacina racemosa, with ivory-white flowers, and Saxifraga peltata, with curious peltate leaves and tall pink flowers in umbrella-like panicles, are both useful plants for cooler sites—they are seen at their best in a setting of Ferns, and do not mind slight shade. Rodgersias and Podophyllums, Paris, and Osmundas may all contribute to a wealth of flower and foliage without endangering the aspect of the ideal water garden, but any large planting of border Phlox, Hemerocallis and other plants rightfully belonging to the flower border will defeat the object of the best-planned water garden by robbing it of its individuality, and will make it appear to be what it too often becomes without effort, a "dumping" ground for spare plants from the garden. *G. B. Mallett.*

(To be continued.)

NOTICES OF BOOKS.

The Book of Rarer Vegetables. By George Wythes, V.M.H., and Harry Roberts. (Published by John Lane, The Bodley Head, London, and New York; price, 2s. 6d. net.)

We have in this book volume XX. of the handbooks of practical gardening, edited by Mr. Harry Roberts. The cultural portions of these books are supplied by eminent gardeners, and in this instance the author is Mr. Geo. Wythes, head gardener to the Duke of Northumberland, at Syon House, Brentford. Mr. Roberts furnishes the several recipes for cooking and serving the various vegetables, tubers, and roots, of which the handbook treats. We could have wished he had translated into the English language the various names of the dishes, most of them Italian, French, and Spanish, for the benefit of those readers not conversant with these tongues. The cultural directions leave nothing to be desired. The chapter on Globe Artichokes is a very good one; but, incidentally, we may say that we prefer the name Crosnes for the tubers of Stachys tuberifera, rather than that of Chinese Artichokes, for they are certainly not Artichokes, though they do come from China. Unless the available land for this crop is very limited in area, it would be an advantage to plant the sets of the Globe Artichoke at 1½ feet apart rather than 6 to 9 inches, as recommended, the greater space thus afforded giving the heavier crop.

The Capsicum in its various forms is referred to in a long chapter, and the cooking recipes for the same are many, and but little known in this country. The author in writing of the Cardoon confuses the terms air and light; for the object in excluding the light from the leaf stalks is to blanch them, as is done with Celery. We are puzzled to know what is meant by "Mignonette" in Mrs. Rundell's recipe for cooking Cardoons.

Mr. Wythes objects to the term, "Turnip rooted" as applied generally in this country to Celeriac, and would rather use that of "tuberous rooted," though that, of course, is technically inaccurate. In the details given of the summer cultivation of this plant, the diligent removal of offsets and of the lowermost leaves receives no notice, yet it is an important point, for the offsets rob the tubers of nutriment, and, together with the leaves referred to, shut out much light and air from the plants. We find no mention of the method of winter storing of the tubers, because, perhaps, our winters are not so severe as is the case in Germany, Austria, Hungary, parts of Russia, and Scandinavia. In these countries it is the practice to take up Celeriac in October, remove all the leaves but the nearest rosette in the centre, and plant the tubers closely together in damp soil, in frost-proof cellars, where light can reach them.

The cultivation of the Egg plant in its several forms is fully treated, and a number of recipes is given for cooking them. Chenopodium bonus Henricus (Good King Henry) is mentioned, the tops furnishing a wholesome vegetable in the young state; but no remarks are made of the use of its farinaceous seeds; although, in writing of another Chenopod—C. quinoa—the seeds are said to be much appreciated as an addition to soups, and in breadmaking, in some parts of South America. The plant is a native of Peru, and is too tender for out-of-door cultivation in this country.

Under Rhubarb, the new variety, Daw's Champion, a very early variety, and Champagne, one of the best flavoured, are mentioned among others. The latter has the property of coming true from seed, which is not the case with other varieties; and the sowing of its seed is recommended, rather than propagation by root division.

The merits of Yams and Sweet Potatos are spoken of at some length, and their cultivation recommended, but we much doubt their adaptability to our climate. The Chinese Yam (Dioscorea batatas), however, succeeds in deep, porous soils in southern England and Ireland, producing club-shaped tubers of from 2 feet to 3 feet in length and 5 to 6 inches wide in the middle. The methods adopted by the Chinese in cultivating these plants—and they have many varieties—are given. Other subjects treated include the Nettle, Chick Pea, Lentil, Chicory, Evening Primrose, Hop, Maize, Nasturtium, Oxalis, Patience (a species of Rumex), Rocambole, &c., which omnivorous man puts on his table in various lands, but which are scarcely known, or not at all, in these islands. The book contains 36 illustrations.

The Art of Garden Design in Italy. By H. Inigo Triggs, A.R.I.B.A. (Longmans, Green and Co., London.)

This is one of the handsomest books on gardening that has come under our notice for a long time past, and the author and publisher must be congratulated on the amount of artistic skill that has been bestowed upon it. The pages measure 17 inches by 13, which affords ample scope for the artist, who illustrates, in a series of full-paged plates, the many historic and interesting Italian gardens that are dealt with by the author. The book is beautifully printed in old style type, with a liberal margin such as book lovers delight in. It is bound in buckram, with a gilt top, and the get-up generally is of a high order of merit. The illustrations are a special feature, and comprise a hundred and twenty-eight finely executed plates, of which seventy-three are produced in collotype from photographs specially taken by Mrs. Aubrey Le Blond, and the others are half-tone reproductions with numerous plans, sketches, and measured drawings of garden detail for which Italian horticulture is so renowned. On the subject of garden design in Italy, we can say but little in the narrow space at our command; we can only deal with the chief features of this handsome volume itself.

The most important illustrations are full-paged views of many of the most famous Italian gardens, the selection including not only those in the north, but also some of the principal in and around Rome, Naples, and the island of Sicily. The villas selected number in all between forty and fifty, and in some cases there are several plates showing different views in the same gardens. Thus Isola Bella, the Boboli Garden, the Royal Palace of the Quirinal, the Vatican Garden, the Villa Pamphili, the Villa Medici, and the Villa d'Este each have three or four full-paged plates devoted to them. The lithograph plans form an important feature of the work, and there are twenty-seven of the most important places dealt with in this way. As the publishers say, gardens can hardly be judged by pictures and photographs alone, and it is essential that, in order to form a correct judgment of their design, these should be supplemented by a survey drawn to scale. The book therefore will, besides appealing to the mere traveller who has pleasant memories of a holiday perhaps long since past and gone, be of service to the student of the art of laying out gardens as it was practised in Italy, the forerunner of all other European nations in this matter.

The text, which is lavishly interspersed with pictorial matter, begins with an historical introduction tracing the history of garden planning from the early days of the Roman Republic downwards. Then in succession follow special chapters on the various villas and gardens selected for illustration, beginning with the famous terraced gardens of Isola Bella, in Lake Maggiore. There are many sketches of garden detail, and also some curious reproductions from old engravings of famous places, inserted throughout these chapters. Then we find accounts of villas on Lake Como, and the famous gardens in and around Genoa, Pavia, Verona, Florence, and Siena.

Of peculiar interest both as regards the pictures and the text are the gardens of the Royal

Palace of the Quirinal and of the Vatican. Rome generally is well represented and treated generously, for the Villa Borghese, which is now threatened with destruction for modern requirements, the Villa Pamphili, the Villa Chigi, the Villa Corsini, the Villa Medici, the Villa Albani, and the Palazzo Colonna each claim an important share of the author's and the artist's attention. Other places of exceptional interest at Frascati, Tivoli, Caserta, and Palermo are all dealt with in the same liberal style.

The book is dedicated by special permission to Queen Margherita, and is one well worthy of that honour.

Pictorial Gardening. By G. F. Mullin. (Methuen & Co., 36, Essex Street, London, W.C.)

In "Pictorial Gardening" we have a work of 134 pages, 8vo., embodying ideas which many of us feel, but cannot well succeed in imparting by rule and measure to others. If one wants a guide in laying out a little patch anew, or making alterations in an old one, it is just the one to afford the required suggestion. The author is a believer in the dictum, oft-times derided or disregarded, that the garden-maker should go to the natural world for the main source of his ideas, whether the garden is to be large or small. If it is to be laid out or altered to advantage, it must be treated on the principles suggested by nature, and with the definite purpose of affording "scope for the play of sunshine and shadow, haze and mist." He acknowledges that the desired effects do not always come when they are expected, but, like all the pleasant things of life, they appear when least expected, and are always evanescent and capricious. Knowing this, the author rarely, if ever, dogmatises or lays down rules for doing this or that, admitting that successful landscape gardeners, like poets, are born, not made, which in the main is correct. Ruskin, he writes, endeavoured to show by what rules Turner was guided in painting his wonderful pictures, but he failed to give more than an outline, the rules or methods not being capable of being imparted or stated.

We were glad to note the importance attached to good breadths of lawn or grass land in British gardens as supplying the most restful kind of background or setting; even woodland scenes are made more charming by the presence of open, grassy glades. How much is this restful verdure missed in the summer months in Continental gardens which have no artificial water supply!

The author's remarks on the use of trees and shrubs are most suggestive and pertinent, and though he pays great attention to the matters of light and shade, he has much thought for such prosaic things as drainage of lawns, levelling, manuring, digging, and the value of fine old turf in forming a lawn, and failing that essential commodity, of clean grass seeds, or by inoculating the land with small bits of good turf. In the making of paths he is, we think, a little bit heterodox, not being a follower of the "thorough," but, it must be confessed, very expensive, methods advised by most landscapists. He leans to Macadam's later method, if the ground be fairly firm, of taking out the shallowest of trenches, or merely laying on the surface of the soil broken stones, and by ramming and rolling thus forming out of these a hard, firm, compact bridge or covering, into which no moisture will penetrate and under which no drains will be needed.

There is much besides that is unorthodox in the book, but in a general way it is a safe and trustworthy guide, filled with novel ideas and poetic fancies that will please if they do not always convince.

THE ALPINE GARDEN.

HELONIOPSIS BREVISCAPA.

This pretty little plant, which received an award of merit at a meeting of the Floral Committee of the Royal Horticultural Society last spring, is still comparatively scarce and beyond the reach of the majority of cultivators of hardy border and Alpine flowers. As it becomes more plentiful it will probably become cheaper, and there is no reason why it should not be highly appreciated by admirers of the early flowers of the year. I have had the pleasure of flowering it this spring, and am glad to be able to speak favourably of this comparatively new claimant for our favours. At its first opening I was disappointed with the appearance of the short scape of white flowers which surmounts the short stem, altogether not more than six or eight inches high. The small white flowers at this stage are not so pure white as they afterwards become, and it is only after the blooms have further developed that the pretty deep lilac stigma and stamens are visible, and these give the Heloniopsis quite an attractive appearance. At this stage it is a plant which will commend itself on close inspection; and in a still more advanced stage, when the flowers are somewhat past, they develop a pretty rosy red colour. It is seldom that a plant improves so much upon acquaintance. One regrets, however, that the name of Heloniopsis given to the genus is so liable to be mistaken for that of Heliopsis. I have seen the specific name given as breviscarpa in error for breviscapa. This species was first described by Maximowicz in the Bulletin of the Academy of St. Petersburg in 1867, but it appears to have been only recently introduced into Great Britain. It belongs to the *Liliaceæ*, and comes from Japan. I have cultivated it successfully in a small peat bed in a partly shaded position, where it seemed quite hardy. I am of opinion that it prefers a rather moist position, and last summer and autumn I kept it well supplied with water while it was developing and finishing its growth. *S. Arnott.*

TREES AND SHRUBS.

RHODODENDRON "GILL'S TRIUMPH."

This is undoubtedly the finest of all the beautiful Rhododendrons raised by the painstaking hybridiser, whose name it bears. At the recent Cornwall Spring Flower Show this hybrid was much the best flower in the hall; it even outshone the well-known Glorie (but surely it should be "Glory") of Penjerrick, which is own sister to "Gill's Triumph," and was bought from Mr. Gill in a batch of unflowered seedlings, which yielded, amongst other fine forms, the gigantic "Trebiano." "Gill's Triumph" is a cross between R. Thomsoni and R. Aucklandi, and bears in large trusses beautiful rose-red flowers, quite distinct from any others. Unfortunately those shown were second-rate in point of size; an unusually severe frost and hailstorms had ruined the finest blooms only a few days before the show was held. It makes a handsome bush, well furnished with rich green leaves fully 9 inches long. Mr. Gill's exhibit—by the way he has been the first prize winner in the open collection at every show of the Cornwall County Society—was composed of a galaxy of beautiful blooms, many of them being unnamed seedlings. Unfortunately these Rhododendrons flower too early in the year to be a success, except in the warmest parts of the county, but much may be done in the way of giving them sheltered positions, such as in the less dense portions of a well-thinned Beech wood. They are so beautiful as to be well worth growing, even if they only give a good display once in half-a-dozen years. *A. C. Bartlett.*

STANDARD FORSYTHIAS.

It is rarely one sees the Forsythia trained as a standard, but I have a plant 6 feet high, with head about 9 feet through, that was lately covered with a mass of yellow flowers. I prune the shoots of the head every spring, as soon as possible after the flowers are over, to within two buds of their base (like a standard Rose). With the exception of the removal of a few inches of unripened terminal points in winter, this is all the attention it receives. These standard plants are objects of great beauty in March and April, dotted about in shrubberies, being equal in effect to the Laburnum, which flowers ten or twelve weeks later. Perhaps this suggestion may lead others to adopt the plan. The present is a suitable time to consider the matter, and commence propagating for the purpose. As soon as the new wood is firm enough cuttings should be inserted. The plants should be kept to a single stem till they have reached the desired height. They will require some support. A quicker plan would be to wait until September or October, and then to remove from the base of the plants clean, straight shoots of this season's growth, 3 or 4 feet long, cutting out every bud except two or three terminal ones, and inserting the shoots firmly in the ground. *G. F. T.*

CULTURAL MEMORANDA.

AGAPANTHUS GLOBOSUS.

This dwarf growing variety was introduced from the Orange River Colony (see illustration in *Gardeners' Chronicle*, Sept. 23, 1905). The dense globular heads of flowers are individually about 1 inch in diameter, and of good shape, and borne on long stems well above the strap-shaped, arching leaves, which are about a foot in length. The three outer petals of the individual heads of bloom are lilac-blue, shaded white, and bluntly pointed, the inner ones being emarginate and much darker in colour; the centre vein of each petal is of a dark shade of bluish lilac.

This useful decorative plant is easily increased by divisions of the crowns, the divisions being potted into suitable-sized, efficiently-crocked pots, giving them a compost of three parts good sandy loam and one of leaf-mould as a rooting medium. Afford water to the roots and grow the plants in a greenhouse in the ordinary way. Established plants are very effective if stood on either side of steps leading into the greenhouse or conservatory, or at certain intervals along the side of terrace walks in connection with other plants producing flowers of different and striking shades of colour. The plant, like the older variety, is a gross feeder, and should therefore be afforded diluted liquid manure at the roots a few times a week during active growth: surface-dressings of some approved plant food will answer the same purpose. *H. W. Ward, Rayleigh.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Permanent Covering over Trees.—This should now be all removed, or it will seriously interfere with the development of the branches. The foliage of the various trees should now be a sufficient covering for the fruit. Many of the Pear and Plum trees against walls will be ready to be stopped and tied in. Upon these operations being carried out effectively and early will depend in a large measure the quality of the fruit. If the trees have been carefully disbudded, the shoots or growths will now require to be pinched back to about four or five leaves, and if those shoots near the summit of the wall are unduly forward these should be operated on first, allowing a few days to elapse before completing the whole of the tree. On very old trees some vigorous young growths should be allowed to take the place of the worst of the old shoots.

Thinning the Fruits may be commenced, especially upon large fruiting varieties. An experienced eye can tell at a very early stage which fruits are in the best positions and should therefore be retained. The strength and age of the trees should afford a good guide as to the weight of crop they should be permitted to ripen; on no account should such a crop be allowed as will seriously weaken the tree and prevent it from maturing its buds needed for the following year's crop.

Gooseberries should be thinned for use in tarts or preserving, especially from bushes that are expected to produce large fruits for dessert. Green Gooseberries are also sought after for bottling for winter use. This being so, one can relieve the bushes as much as may appear desirable. Gooseberries growing against walls should be pinched back as soon as the growths are long enough to admit of this being done. Nail in the shoots required for extension, and if any insect pest is present syringe the trees with strong quassia water. If caterpillars are seen after syringing the trees, dust the ground below with strong lime and kainit, which should stop the ravages of these pests.

Cherries have set pretty well, especially the varieties Early Rivers (ripening in June), Elton (ripening early in July), Knight's Early Black (ripening in the third and fourth weeks in June), White Bigarreau, May Duke, Frogmore, Bigarreau de Schrecken, Emperor Francis, Waterloo, St. Margaret, Géant de Hedelfingen, Black Tartarian, and Bigarreau Napoleon. These are grown as cordons against a wall, and also as pyramids. Keep a sharp look-out for insect pests. Protect early varieties with nets as soon as they begin to colour, or the birds will find them out. The netting must be placed some distance from the branches so that the fruits cannot be plucked by the birds. As soon as the fruits have passed the "stoning" stage, afford the trees a good watering with liquid manure.

Fig Trees.—Pinch out the points when the branches have made a good growth. Disbud them early, taking away all growths that are not necessary to be retained. If growths are wanted at the base of the wall, lay one or two shoots in a horizontal position, and these will produce new growths. Figs are showing uncommonly well this season.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Peaches and Nectarines.—Where such varieties as Hales' Early, Waterloo, and Alexander Peaches were started at the beginning of January, the fruits should now be approaching the ripening stage. Several fruits of the last-named variety here are now ripe (May 15). This early Peach is most useful to any gardener who has to provide variety in dessert. Cardinal and Early Rivers Nectarines follow very soon afterwards. If they can be gathered a few days before sending them to the table, and placed in shallow boxes of cotton wadding on a shelf in a dry, warm atmosphere, and covered with tissue paper to shield them from the sun's rays, the flavour will be much enhanced. Continue to keep the atmospheric temperature at 60° to 65° at night, and allow it to rise to 70° to 75° on dull days until the fruit has finished swelling. As soon as a tree has been denuded of its fruit it should be syringed well with a weak solution of Gishurst Compound in order to dislodge any insects there may be on the young growths. Cut out all weakly shoots at the same time, and any that will not be required another year, so that the remaining fruit-bearing branches may be the better exposed to the influence of sun, air, and light.

Successional Houses.—On trees that will ripen their fruits in succession to the early ones, the fruits should now be finally thinned out, and all side growths should be stopped as soon as they appear. Cut out any superfluous shoots. If the borders have not been mulched, let this be done without delay. Peat-moss litter, which has been used in the stables, is an excellent material, for it will retain the moisture in the borders, and give off ammonia into the atmosphere, which is beneficial to the foliage of all fruit trees. When the fruit has passed the stoning stage, let the trees be given every possible assistance to aid in developing the fruits to their fullest size and highest colour. Syringe the trees early in the morning and in the afternoon with the determination to keep down red spider. The borders will require water frequently, but this should be applied with discretion, and as the formation of the border may render it desirable. Afford good soakings to trees that are carrying heavy crops of fruit. Weak liquid manure from the farmyard is an ideal stimulant for all kinds of fruit trees, and Peruvian guano is effective when applied as a change to this. With a view to obtain good colour in the fruits, these should be exposed to the sun by placing smooth pieces of laths beneath them, with the ends resting on the trellis. It should be borne in mind that large-sized, richly flavoured fruits can only be obtained by severely thinning them out.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Vegetable Marrows.—The planting of these for supplying the main crop out of doors may now be undertaken without fear of them suffering loss through frost, especially if slight protection be afforded the plants for a few nights until they become established. There is no need to make hotbeds for this crop, which only tend to produce rank and unfruitful growth. Select an exposed position and prepare stations at every 6 feet by making an opening a foot deep and sufficiently wide to hold two barrowfuls of a compost of well-rotted manure and good soil in equal parts. Make this moderately firm and plant three plants on each station. When the young leading growths have become 18 inches in length, pinch out the leader in order to induce fruitfulness. The roots will need much water. The plants should be damped overhead during dry weather.

Early Cauliflower.—Plants in pots that are now "turning in," and those in frames in the same condition, should be liberally assisted with liquid manure to increase the size of the "heads." Protect the "curds" and thus maintain their purity by bending the leaves over them. The earliest batch outside should be slightly earthed-up after applying a good watering.

Celery.—Plant out this crop from frames, as previously recommended, before the plants become too large and spoiled owing to want of more space. Select a dull, showery day for doing the work. Young plants in frames grow so rapidly that if they are kept there a day or two too long it may make all the difference between a good crop and a bad one. A good soaking of water should be given to settle the plants in their new quarters as soon as they have been planted, and watering will be necessary throughout the summer during dry weather. Plants from the latest sowing should be pricked off in frames whilst still quite small.

Protecting Material.—By the last week in the present month all rough framework, nets, or other protecting material against frost may be removed with some degree of confidence, as there will then be little likelihood of much damage being occasioned to the most tender crops, unless in very late districts.

Planting out.—As fast as young plants of Brassicas become fit, let them be planted out. Broccolis and Brussels Sprouts should be planted in very firm soil. Prick off seedlings as soon as they can be handled. Protection in some gardens is very necessary against jackdaws and wood pigeons, for these birds soon make short work of the plants, and of young Peas just appearing through the ground, when they are in quest of food for their young.

Box Edgings.—Trim up any edgings that are growing too straggly, the young growth made afterwards will not be likely to suffer from the effects of frost. Weed-killer should be used on the paths with much caution where the roots of fruit trees or live edgings are near. It is far better to run no risk, but to keep the weed-killer at least 2 feet from the box.

Staking Peas and Beans.—This is a big item in large gardens, and it is a question whether wire netting of a large mesh, run in double lines, is not as effective and more profitable than sticks. I have not tried the wire, but hope to do so shortly. Stacking should be done early and neatly after drawing a little soil to the plants. Sticks at least 8 feet in height should be afforded, and rods should be tied in a horizontal position to each stick near the top in order to strengthen the work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Dendrobium Phalænopsis.—After a long decided rest, the plants of this exceedingly useful species are now growing freely, and before new roots push out from the base of the new growths, they should, if necessary, be re-potted, or, if not in need of re-potting, the old material should be picked out down to the drainage and fresh compost afforded. This species will thrive best in ordinary flower pots, and it is important that these should be small in proportion to the size of the plants. Copper wire handles of suitable lengths are attached to the pots so that they may be suspended from the roof, and in a position where the plants will be exposed to much light, which is an important matter towards successful cultivation. Plenty of well-dried fern-rhizome may be used for ensuring drainage, and a compost of coarse fibrous peat, sphagnum-moss, with broken crocks intermixed, should be packed firmly around the roots, as they delight to push their way among the hard, porous material. After plants have been disturbed at the roots, either by re-potting or re-surfacing, let them be placed in the hottest house. Until new roots become numerous only a small quantity of water will be necessary, but afterwards and until the flowers open it may be afforded copiously. In addition to the stippling on the glass as advised in a former Calendar, these plants require a very thin shading, and this only during the hottest part of the day. When this is removed early in the afternoon, the house should be closed and well damped down, and the plants lightly sprayed overhead with tepid rain water. D. bigibbum, D. Statterianum, D. superbiens, D. taurinum, D. stratiotes, D. secundum, and D. Parishii all require similar treatment.

Catasetums, Cycnoches, and Mormodes also do well if suspended alongside the above named Dendrobriums, but they should not be sprayed overhead, as the young growths are easily rotted by water lodging in them. Many of these Catasetums, etc., are now growing vigorously, and well-rooted plants will require abundance of water at the roots; but more care will be necessary as regards those plants that are not yet well established, or disease may result. Those Catasetums which produce their flower spikes in conjunction with the young growths will require extra supplies of water to prevent the back pseudo-bulbs from excessive shrivelling.

Cœlogynes.—In the warmest house plants of Cœlogyne pandurata and C. asperata (Lowii) are now developing their flower spikes from the centre of the young growths, and they should be kept well supplied with water at the root until the growths are matured. The rambling habit of C. Meyeriana makes a certain amount of training necessary to keep it within bounds. It requires a damp, shady position, and plenty of overhead syringing. C. Dayana, C. Massangeana, and C. tomentosa grow very well suspended from the roof of the Cattleya house. Those varieties from higher elevations as C. barbata, C. elata, C. conferta, C. cristata, C. ocellata, C. speciosa, C. Lawrenceana, C. fuliginosa, C. flaccida, etc., thrive best in a house in which the atmosphere is a few degrees warmer than that of the cool Odontoglossum house. These Cœlogynes require plenty of light but not direct sunshine, and when growing freely abundance of water is necessary. On warm, sunny days the plants should be lightly sprayed overhead. The best time to re-pot any of these species is when they are starting into new growth, and the ordinary compost of well-drained peat, loam, and sphagnum-moss should be used.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Hybrid Streptocarpus.—These beautiful stove perennial plants may be had in flower for the greater part of the year; indeed, they almost surpass the Gloxinia in this respect. Their flowers possess delicacy of colouring and elegance of form, and great variety can now be obtained from a single packet of seed. They may be propagated by division of the plants, but as they are so easily raised from seed, and the constitution of the plants thus raised is so much stronger, this method of increasing the stock is preferable. The seed should be sown thinly in sandy soil, on a level surface, and be covered very slightly with soil. When the seedlings are large enough, they should be transplanted into pans or shallow boxes, and from thence later into 3½-inch pots, in which they will produce some flowers in the autumn. The following season, however, they will be more productive of flowers, and if the plants be further potted into 6-inch pots they will then form admirable subjects for decorative work in the residence or for grouping in the conservatory and corridor, which structures will suit their requirements during the summer months. The compost used at Cleveley for the final potting consists of fibrous loam, leaf mould, and sand, with a 5-inch potfull of dried fowl manure—which I consider the best of all fertilisers for these beautiful plants—added to each bushel of the compost. Some leaves of these plants measured today were 18 inches in length, while from 80 to 100 flowers were counted on a single plant.

Hard-wooded plants for next season's forcing.—Plants of Azalea mollis, A. occidentalis, Rhododendrons, Lilac, &c., growing in the reserve ground and intended for forcing during the coming winter, should have all their flowers removed so as to enable the plants to make strong growth and to set their flower buds freely. By this timely attention the constitution of the plants will be further built up and the quality of the flowers much improved thereby, while forcing is rendered much easier when the plants possess a good constitution. Plants of Lilacs which have been recently forced should be pruned to three or four eyes in the hard wood, and be planted in the reserve ground, after which they should not be lifted for forcing until the autumn of 1907. It is essential to have a duplicate batch of these plants so that they can be lifted and forced every alternate season.

Richardias (Calla) Æthiopica.—The present is the best time for planting these outside and, if necessary for dividing those plants which have been flowering indoors for the past four or five months. In planting, a shallow trench should be made as for Celery, placing in the bottom of the row a mixture of loam and well decayed manure. The rows should be formed 2 feet apart, allowing 18 inches between the plants in the rows. Incorporate the soil well among the roots, and when the planting is finished place a stake to each plant. The leaves will gradually ripen and die down; at the same time young roots will push into the new soil, and fresh crowns will be formed. Abundant supplies of water should be given Richardias during the summer months. Plants intended for early flowering should be ripened in pots plunged in ashes in full sunshine.

Pits and Frames.—As soon as bedding plants, &c., are removed the glass should be well washed, and the structures made ready to receive Begonias, Primulas, Cinerarias, &c.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Garden Vases (see fig. 131 and supplementary illustration).—At the present time of year the appropriate mode of filling garden-vases for summer display is exercising the minds of those concerned with them, and it is in comparatively few gardens that vases are not in evidence in some form or another. To furnish them effectively and in such a manner as to remain bright throughout the summer months, while at the same time ensuring harmony with the surroundings demands much thought and consideration on the part of the person responsible. Nothing can be conceived more detracting or disappointing than the appearance of a formal garden where a haphazard style of vase decoration is practised. Happily, unlike other phases of formal gardening, once a system of planting has been adopted, which in form and colour is unmistakably in harmony with the architectural designs of the environment, repetition year after year in the filling of vases is not only permissible but desirable. Where vases are employed together in the decoration of a particular part of the garden they, to a certain extent, should be all filled in the same way, as in such instances they are more often than otherwise used to emphasize a particular feature continually repeated in the architectural design, in which case vases composed of many different colours and forms would be incongruous. For example, in a series of terraces, where perhaps fifty vases are used, it would be absurd to attempt to fill every vase differently to its fellow, and it would be much more effective to fill them in the same way, or in two colours and alternate them. Of course, for particular positions on the terrace something distinct to the other vases might be used, but exactly in what form and colour must be determined by judicious attention to proportion and harmony. In the choice of plants for garden-vases much therefore depends on the existing environment and the style of architecture they are intended to adorn. Also the conditions of warmth and shelter that prevail in the positions they occupy must be considered. For ordinary vases the Ivy-leaved Pelargonium "Souvenir de Charles Turner" has much to commend it. The plants should be well-grown in 5 or 6-inch pots previously to being placed in the vases, and they should be planted thickly, so that they will make an effective show at once. The best plan in dealing with them is to tie the plants to neat, thin stakes to give height and symmetry to the vase, while some of the growths may be allowed to assume a pendulous habit. The colour of the flower is striking from a distance, and is therefore well adapted for vase work. The Paris Daisy (Chrysanthemum frutescens) is a popular vase plant, and its profusion of white flowers is very effective. The semi-double variety Queen Alexandra being of less vigorous growth than the type, is particularly suitable for planting in smaller vases. Large vases might be filled with Fuchsias, whose pendent habit lends itself to this kind of decoration, while in combination Ivy-leafed Pelargoniums of the same shade of colouring could be used.

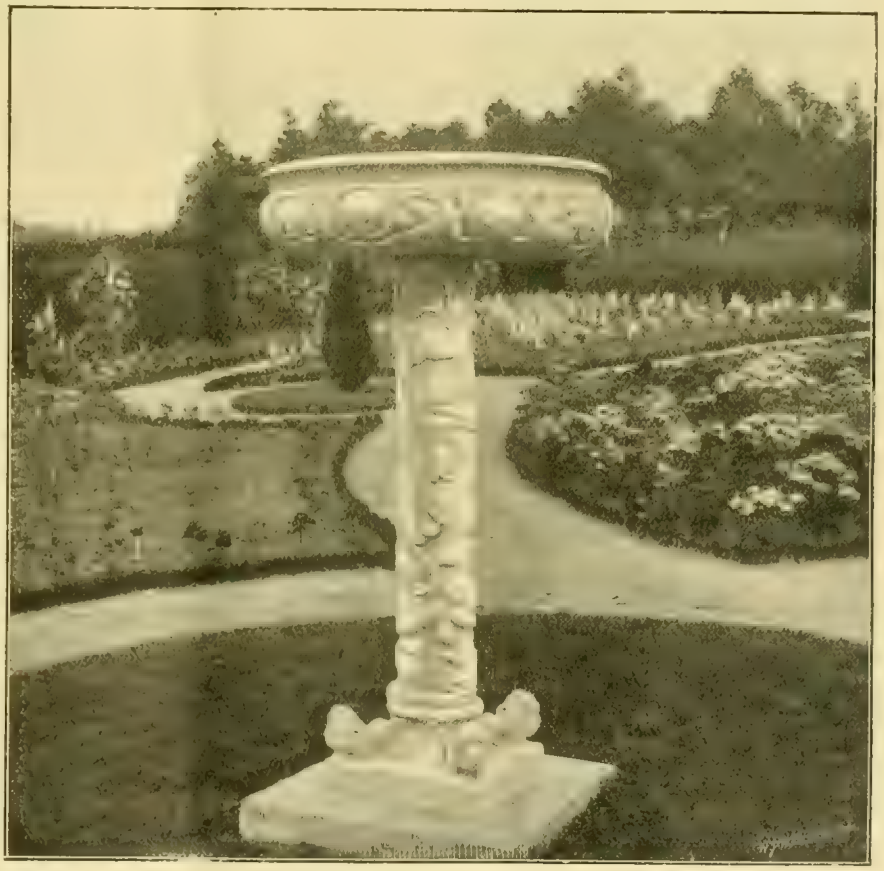


FIG. 131.—VENETIAN VASE IN THE GARDENS AT DOWNSIDE, LEATHERHEAD, SURREY.
See "The Flower Garden" and p. 328.

THE APIARY.

By Chloris.

Re-queening.—Many will be seriously thinking of re-queening, and considering what sort of a queen will suit them best. If advertisements are to be relied on, the British bees will be discarded and foreigners introduced. Before taking such a step, however, it will be well to ascertain the qualities of those to be introduced. The Cyprians are noted for bad temper and a propensity for stinging, and the Syrian bees for their breeding powers, but what value will prolificness be to us if they continue to swarm? We desire honey, not swarms. Added to this, the Syrian bees cap the honey so poorly that it will not travel at all well. The Carniolans are easy to handle, but they swarm quite as much as the Syrians. The Carniolans have been termed the "Ladies' bees," because of their good temper, and the ease with which they may be managed. On the whole, it will be well to retain the Britishers, selecting those that are known to produce good workers. Many believe in introducing a first-year queen every year. This, I fear, is a mistake, as the first-year queen is not in her prime. The second year appears to be her best season.

Foundation for Swarms.—This question is often given but little consideration. Some, in their anxiety to secure a good yield, give the bees drawn-out comb, which generally defeats the end in view. Before the queen will lay her eggs in the old comb, the bees have to clean out the cells. But honey is being carried in, so the bees commence storing at once, with the result that they continue to do so even after supers have been added, and this, too, to the exclusion of brood, so that the colony dwindles and no surplus is secured. When a swarm issues, they are ready to commence comb-building, because they have consumed a large quantity of honey to construct their future house. Then, why not utilise this store by supplying the bees with starters, and the bees will build nice, straight combs of worker cells. By giving full sheets of foundation to a natural swarm, much valuable wax is lost and little time is gained. It is place on a rack, sections of drawn-out comb. When a swarm has been hived up on frames fitted with starters, and if the honey flow be good, to say nothing of favourable weather, then place on a rack sections of drawn-out comb, and the bees, having nowhere else to store, are forced above; then having acquired the habit of going there they continue to do so, and the brood chamber is constructed and filled with brood.

Water.—At this period of the year breeding is encouraged by a good supply of water. If stones are placed in jars filled with water, the bees will soon discover it and will be seen there frequently. Only the other day I was riding along a rutty road near an apiary, and was surprised at the number of bees on the wet mud taking their fill of water.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	May 28	Ann. meeting (7 p.m.) and Dinner (7.30 p.m.) of the Kew Guild at Holborn Restaurant, London.
TUESDAY,	May 29	Roy. Hort. Soc. Show in the Temple Gardens, Thames Embankment (3 days). Hort. Club Dinner at 6.30. Winter Flowering Carnation Soc. meeting and Dinner.
WEDNESDAY,	May 30	British Gardeners' Assoc. annual meeting at Essex Hall, Essex St., Strand, at 6.30 p.m.
THURSDAY,	May 31	Bath and West and Southern Counties' Soc. Show at Swindon (5 days).

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—57·8°

ACTUAL TEMPERATURES:—

LONDON. *Wednesday, May* 23 (6 P.M.): Max. 71°; Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 24 (10 A.M.): Bar., 29.8, Temp., 66°, *Weather*—Dull.

PROVINCES.—*Wednesday, May* 23 (6 P.M.): Max. 56° South-west Ireland; Min. 46° East Scotland.

SALES.

MONDAY—
Special Sale of Orchids in flower, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 2.30.

TUESDAY—
Duplicate Orchids from the "Oakwood" collection, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 2.30.

WEDNESDAY—
Duplicate Orchids from the "Westfield" collection, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 2.30.

THURSDAY—
Duplicate and other rare Orchids, 800 Cypripedium Fairrieanum, 3,000 Odontoglossum Crispum, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—
Palms, Plants, Ferns, Geraniums, Begonias, Gladiolus, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

Forestry. There are many indications that the importance of laying down correct principles as a guide to practice is at length becoming recognised in cultural matters generally. It is also becoming obvious that increased attention is being paid to the desirability—we may almost say the necessity—not only of regulating existing forests in this country, but of very largely increasing the area devoted to the production of timber, and thus not only of augmenting revenue and procuring supplies which we now have to procure from abroad, but of furnishing profitable and health-giving labour to the working classes. In this work Dr. Schlich has been an able and earnest pioneer. Messrs. Bradbury, Agnew & Co. have now issued the first volume of the third edition of Dr. Schlich's *Manual of Forestry*. The fact that it has reached a third edition is itself an evidence not only of its authoritative character, but also bears witness to the increased interest which the public—or that portion of it interested in forestry—takes in the subject. On all accounts this is very satisfactory. In preparing this edition the author has rearranged and added to his materials. The first volume is devoted to forest policy in the British Empire, the second, which will appear later on, to sylviculture, the third to forest management, the fourth to forest protection, the fifth to forest utilisation, the last two volumes being contributed by Mr. W. E. Fisher. In the present volume we have sections dealing with the utility of forests, direct and indirect, the relation of the State to Forestry, and the reasons for and against the maintenance of State forests in contrast to those managed by individuals or communes. Part III. includes a general survey of forestry in the British Empire, beginning with India and passing on to Borneo, Australia, the various African possessions, Canada and the West Indies. Chapter V. is devoted entirely to forestry in the United Kingdom, and is the one with which home readers will be most concerned. Up to the present time, however, India alone has satisfactorily grappled with the forest question, but other parts of the Empire are following suit. Canada and Australia are much behindhand, though it is to them that we shall mainly have to look in future for the supplies of timber. Imports at present from various sources amount in value annually to 20 millions—some large portion of which might be kept at home, with correspondingly increased employment for the workers. The preservation of the State forests in India has, says the author, "been placed on a safe basis for the everlasting benefit of the people of that country and of the Indian Exchequer." Here we may interpolate the statement that, recognising the great importance of the matter to the South African colonies, a school of forestry has been established, including two years' practical work at Tokai, near Cape Town, with lectures and other instructions by Mr. Hutchins, of the Forest Department, and the professors of the South African College. Extra tropical forestry will be taught as distinguished from the forestry of temperate regions on the one hand, and that of tropical countries on the other.

An "expert forester" must be a man of many attainments. Here is an enumeration of the subjects he is expected to be conversant with: Pure and applied mathematics, surveying, elements of general law, political economy, physics, including meteorology, chemistry, inorganic and organic, including a knowledge of soils, mineralogy and geology, zoology, especially entomology, and lastly, but certainly not least in importance, botany, including a knowledge of the life-history of Fungi. The author suggests incidentally that the City companies or other corporations should purchase suitable tracts of mountain or barren land in various counties where forest-work could be given to the unemployed during the winter. If afforestation were undertaken on a large scale, there is no reason, says Dr. Schlich, why five or six millions of acres should not gradually be brought under wood, thus securing the production of the bulk of the ordinary timber required by the country. Every acre afforested would require an expenditure on labour of, say, £3 for planting. After the forests have been established every acre would require about five days' labour a year, or a total of 30 million days for the work in the forests. To this has to be added the large business of transport and working up the timber, as well as the various industries which would spring up in connection with it. On the whole, it is estimated that not less than a population of two and a half millions of people would find additional work in the country, counting five members for each family. Moreover, most of the forest work could be done in the winter, when other employment is scarce. The present volume is illustrated with numerous photogravures, and is provided with an index.

OUR SUPPLEMENTARY ILLUSTRATIONS.—For our own parts we think well-grown plants the best decorations of a garden, and if, in addition, the plants have some interest apart from mere beauty, colour, or fragrance, all the better. But there are many who think that statuary, finely-designed vases, and architectural adornments add greatly to the beauty of a garden. When that garden is of the formal type, and especially when it is in juxtaposition to the mansion or other architectural features, we should of course agree. There are others, again, to whom the topiary art has attractions, who admire the quaint or grotesque as manifested in clipped shrubs. To us a hedge is a hedge, and should not be made a wall. But here, again, tastes differ, and happily for us there is room and opportunity for all and every style of gardening. Our supplementary illustration this week shows a beautifully proportioned Greek vase in the gardens at Dogmersfield Park, and a good example of topiary work at Brockenhurst, Hants, cool in summer, but gloomy in other seasons. At Versailles, where this style of gardening is adopted on a very large scale, a depressing effect is produced, even in midsummer. The note on p. 324, of a book on Italian gardens, shows what was done in these directions when art rather than gardening reigned supreme in gardens, see also p. 330. It is a matter of taste, no doubt, but we do not think that gardeners are likely to be much impressed with the mouldering, slime-becovered decorations which characterised so many Italian gardens a few years ago. Even in sunny Italy, the fountains of the finest design suffer from neglect and the effects of climate. The bowl or font figured on p. 327 is stated to be of Venetian origin, and was photographed by Mr. MASON GOOD in the gardens at Downside, Leatherhead. In an article on the same page, Mr. PETTIGREW gives some excellent practical hints as to the filling of vases in terrace gardens and similar situations.

THE TEMPLE SHOW.—Our readers may be reminded that the Royal Horticultural Society's nineteenth annual show in the Gardens of the Inner Temple, Thames Embankment, London, will be opened on Tuesday next, and will remain open until Thursday night. Lieut. Godfrey's Military Band will perform each day. Visitors to this show from the provinces, the Colonies, and abroad will have the opportunity of attending other functions, which have been arranged to take place during the early part of next week. Thus the Kew Guild will hold its annual meeting, and subsequently dine at the Holborn Restaurant on Monday evening; the Horticultural Club and the new Winter Flowering Carnation Society will provide dinners at the Hotel Windsor and at Anderton's Hotel respectively on Tuesday; and the British Gardeners' Association will hold its annual meeting in the Essex Hall, Strand, on Wednesday evening. In addition to these functions there will also be important sales of Orchids at Messrs. PROTHEROE & MORRIS' rooms on the first four days in the week. We hope that the weather will be bright, and warmer than it is at the moment of writing.

HORTICULTURAL CLUB.—For the benefit of those attending the Temple Show, there will be a house-dinner at 6.30 p.m. on Tuesday, May 29, at the Windsor Hotel, Victoria Street. There will be no lecture after the dinner on this occasion.

Winter Flowering Carnation Society.—We are informed that the inaugural meeting of this society will be held on Tuesday, 29th inst. (first day of the Temple Show), at 8 p.m., preceded by a dinner at 7 p.m. in Anderton's Hotel, Fleet Street. Tickets, 3s. 6d. each, may be obtained from members of the committee, or from the Hon. Sec., Mr. Hayward Mathias, Thames Ditton, Surrey. All interested in winter-flowering Carnations, whether already members of the society or not, are invited to be present.

British Gardeners' Association. — The annual general meeting of this association will be held at the Essex Hall, Essex Street, Strand (close to the Temple Gardens), on Wednesday, May 30 (second day of the Temple Show), at 6.30 p.m. Mr. W. H. Divers, head gardener to His Grace the Duke of Rutland, will preside. The association has made steady progress during the past year, and there are now over 900 qualified gardeners on the roll of membership. Gardeners wishing to join the association are invited to attend the meeting. Members should make every effort to be present, as the general rules of the association, which have been drawn up and published by the executive council, will be submitted at this meeting for their approval, and subjects of the greatest importance will be discussed.

National Amateur Gardeners' Association.—A lecture on "Carnations" will be delivered by Mr. A. J. Rowberry at Winchester House, Old Broad Street, E.C., on June 5, at 7 p.m.

The Reading and District Gardeners' Mutual Improvement Society.—The annual report of this very successful society is on our table, and from this we gather that the membership at the time of going to press numbered 289. The pamphlet is full of records of useful work done, and there is every promise of such work being continued in the future. Leonard Sutton, Esq., is President, Mr. C. Foster, Chairman, Mr. E. D. Dore, Librarian, and Mr. H. G. Cox, Secretary.

Easter Monday at Kew.—Our good friend the *Revue Horticole* chronicles the fact that more than 90,000 persons visited the Royal Gardens at Kew, on Easter Monday, in spite of an entrance fee of 1 f. 25 c. per head! We had imagined that all the horticultural world knew that Kew is open every day (except Christmas Day, when it is closed) without any payment at all.

George Herman Ellwanger. — American papers record the death of this gentleman on April 23, at Rochester, N.Y. He was a man of extensive and varied literary accomplishments, says the *Florists' Exchange*, and was a director and secretary of the firm of Ellwanger & Barry, of which his father, George Ellwanger, is president. G. H. Ellwanger edited his brother's well-known book on "The Rose," and was himself the author of the "Garden Story" and numerous other publications, and combined practical knowledge with a charming literary style.

Report of the Royal Agricultural Society's Botanist.—We have received the annual report for 1905 of the Consulting Botanist (Mr. William Carruthers, F.R.S.), of the Royal Agricultural Society. Useful work was done in seed testing, in naming plants, and in determining poisonous species. Common Chickweed proved fatal to lambs, not because in itself injurious, but because it is unwholesome when taken in excess. Solanum Dulcamara, Colchicum autumnale, Conium maculatum, Mercurialis perennis and a few other plants were also reported to have proved poisonous to cattle in various localities. Diseases of the Potato were investigated, and Mr. Hans Th. Gussow contributes an illustrated paper on Potato scab (Rhizoctonia),

Customs Definitions.—A judical decision has, we learn, been given in the United States to the effect that "Vetch seed is grass seed," and that Canary seed (a true grass) is not grass-seed. No wonder fiscal problems are difficult of solution. In the above instances it is as if black were declared to be white and white solemnly pronounced to be black. How convenient are popular names; how unscientific fiscal regulations!

Dorking and Leatherhead. — The last volume of the *Homeland Handbooks*, issued from Association House, Bride Lane, Fleet Street, deals with Dorking and Leatherhead and their surroundings. Mr. Joseph Morris is responsible for the letterpress, and there are many illustrations. The book deals in an appreciative spirit with a beautiful part of Surrey, and special interest is this year claimed for the district, as it is the bi-centenary of the death of John Evelyn, a native of Wotton. In the grounds of Wotton House are still many fine trees originally planted, or at least selected, by the author of the *Sylva*. The whole neighbourhood is full of interest, and we can only hope that it may be long spared from ruthless over-building and overcrowding. We fear that the interesting Box trees, which gave their name to Box Hill, are likely to get fewer and scantier every year. Mr. Morris mentions them, and some of the traditions associated with them. The truth, we believe, is that the trees are the remains of a Box forest, probably dating from very remote times, and are aboriginal natives that have disappeared from most parts of the country, but have, in some strange way, been preserved here. Orchid lovers, too, are specially interested in the neighbourhood, for at Burford is the well-known collection of the indefatigable President of the Royal Horticultural Society.

The Calamity in California (April 18).—A writer in the *Florists' Exchange* for May 6, details his experiences. The Easter business among florists had been the most successful ever experienced. The writer's home in San Francisco was demolished, but he himself escaped with a few bruises, 95 cents, and a blue pencil. Fully two-thirds of the city were destroyed by the earthquake and subsequent fire, and all the establishments of the florists and plantsmen within the desolated area, about 150 in number, were utterly destroyed. Some few in the western part of the city were, relatively speaking, uninjured. The population of San Francisco has decreased, says another report, from 400,000 to about 150,000. Practically every building in the Santa Clara Valley is destroyed. Luther Burbank reports that the whole business part of the town of Santa Rosa is a complete wreck. Burbank's establishment itself suffered but little injury. "Everybody," he continues, "is cheerful, hopeful, busy as bees when a hive is upset, building again." The town of San Jose is reported as almost completely demolished. A very gruesome result of the catastrophe as it affects the commercial florists and undertakers is mentioned in the *Weekly Florists' Review*. Owing to the disorganisation and destruction of property most of the undertakers' premises were destroyed, and the florists, being in the same predicament, were unable to supply the funeral wreaths, which are used even more lavishly in the United States than they are here. "The all-absorbing questions with the wholesale growers at present are: How far shall I keep up the cultivation of my plant? Will it pay me to hire the necessary help to keep it in operation? Shall I continue to carry a big lot of young stock for fall replanting? Would it not be cheaper to let my Carnations and Roses die and close up the houses? Shall I cancel my fall order for bulbs? I wonder how long it will be before I can sell anything? In the meanwhile hundreds of thousands of the finest stock ever grown are daily consigned to the rubbish heap."

Volcanic Dust.—Many members of the International Congress of Chemistry visited the sad scenes in the neighbourhood of Vesuvius. One member who had collected the volcanic dust, soon after the eruption, at Addlestone, in the Thames Valley, and again on a roof at Turin, was enabled to satisfy himself of the identity of these specimens with the Naples dust.

Aucuba.—Dr. Mayr tells us that this word should properly be written Aokiba—signifying in Japanese bluish-green leaf. We do not think Dr. Mayr's proposal to alter established usage is likely to be adopted.

Germination of Seeds.—A paper by Mr. C. H. Neumann on the testing of the germinating power of Sugar-Beet seeds shows the amount of specialisation which has taken place. The author found that the best medium for ensuring the regular germination of the seeds was a damp mixture of sand and sawdust, the temperature being carefully regulated.

Forestry at Oxford.—We understand from *Nature* that Prof. William Schlich, F.R.S., St. John's College, Oxford, has been constituted by H. M. Secretary of State for India, Professor of Forestry, so long as he shall be continued in his position and be resident within the University.

"School and Garden."—This booklet, by Mr. Walter P. Wright, is described as being a gardening story and containing practical hints on school gardening. Plenty of useful notions are inculcated in the first or story part of the book, and young readers too much in haste to learn from these may be encouraged to study the second or practical section that follows. The information given may be depended upon, and is put in plain tabular form and many practical illustrations are added. We concur in the writer's hope that schoolmasters will find the book helpful, and also trust that school children will think it interesting. The second portion should appeal to adult as well as to youthful gardeners in search of help.

The Surveyors' Institution.—An afternoon reception will be held in the gardens of the Royal Botanic Society, Regent's Park, on Tuesday, June 19, from 4 to 7 p.m. Annual meeting: The annual general meeting of the institution, to receive the report of the council and the announcement of the result of the election of officers for the ensuing year, will be held in the lecture hall, on Monday, May 28, at 3 o'clock. The prizes awarded to successful candidates, in connection with the recent preliminary and professional examinations, will be presented by the president at the annual general meeting.

Ruined by Motor Dust.—At a meeting of the Cheshire County Council recently there was a discussion on the motor dust nuisance. Dr. Hodgson said that no county suffered more from this cause than Cheshire. He knew a nursery gardener whose business was ruined by dust.

Country in Town Exhibition.—The prospectus and regulations for exhibitors in connection with the Country-in-Town Exhibition, which will be held in the Whitechapel Art Gallery, from July 5 to 19 are now ready, and may be had from the honorary secretary, Mr. Wilfred Mark Webb, at Toynbee Hall, 28, Commercial Street, Whitechapel, E. Exhibits are invited that show in any way what has been done, or what can be done to introduce some aspect of the country into the street, gardens, or schools of our great urban centres.

Selborne Society. — The annual conversazione was held on Friday, May 25, after these pages have gone to press, from 7.30 to 11 p.m., in the building formerly occupied by the University of London in Burlington Gardens, W. Lord Avebury's presidential address was to be given at 8 p.m.

FLOWERS IN SEASON.—The Daffodils have come and gone, and in their place we have the no less beautiful Tulip. Among the prettiest and most useful garden members of the genus are the May-flowering Cottage and Darwin Tulips, whose bold, sturdy habit and rich clear colours render them admirable subjects for the flower border. From Messrs. WALLACE & Co., Kilnfield Nurseries, Colchester, we have received a selection of varieties in many handsome colours, chiefly of the Cottage varieties, and although it is difficult to say which type is the more beautiful of the two sections we give the palm to these, by reason of their brighter colours and less formal shape. Nothing is more graceful among the genus than flowers of the Gesneriana type, and this is seen to perfection in the beautiful G. lutea, a flower of pure rich yellow colour, with deep petals just broad enough to furnish gracefulness. Vitellina has paler yellow colouring, but is none the less beautiful. Primrose Gem is another good yellow, while pallida is even richer in colour than its type. The crimson Isis, Scarlet Emperor, Maid of Honour, whose pale recurving petals are lightly tipped with rose, and Inglescombe Pink, are all admirable in their degrees of colouring. More formal in build, and sturdier in habit are the "Darwins," but they are equally beautiful in their degrees of colouring, and they form grand subjects for massing in beds. Henner, La Tulipe Noire—the black Tulip so-called, but really a very deep maroon-crimson, Madame Krelage, pink, Painted Lady, and Farncombe Saunders are a few of the gems of this section. The May-flowering Tulips are all admirable subjects as cut-flowers for vases and indoor decoration generally. Those sent by Messrs. WALLACE have remained fresh and bright in water for more than a week.

Messrs. WILLIAM BULL & SONS, King's Road, Chelsea, send "pips" from their strain of herbaceous Calceolarias. From Mr. LYNCH, V.M.H., came flowers of Erinacea pungens, an interesting little Spanish shrub. The slender, wiry branches are almost destitute of leaves and divide into long spiny branchlets, loosely arranged and widely spreading. The few leaves that are present measure each about 1 cent. in length by 2 mill. in breadth. In form they are linear oblong-obtuse, tapering at the base and densely covered with long, silky-white appressed hairs. The flowers are in terminal clusters, five or six to a cluster, each shortly stalked about 2 cent. long, with an inflated, balloon-like calyx and a violet coloured, pea-shaped corolla. The plant is evidently adapted for dry climates, its transpiring surface being reduced to a minimum. It is a native of Spain and is suitable for a sunny position on the rockery, where its peculiar form and pretty flowers render it very attractive. It was figured under the name of Anthyllis erinacea in *Bot. Mag.*, 676, and in *Loddiges' Botanical Cabinet*, 318.

Specimens of Fendlera rupicola have been received from Sir E. LODER's garden and from the Cambridge Botanic Garden. It is a shrub with wiry, more or less hairy branches and small oblong, somewhat thick, obscurely three-nerved leaves. The white flowers are formed at the ends of short lateral growths of the year. Each is about 2 cent. or ¾ inch across with a reddish, cup-like calyx dividing above into four ovate-acute lobes shorter than the four spreading, oblong, white petals. There are eight perigynous stamens, each filament broad, white, and petaloid, dividing above into three divisions, of which the central bears the two-lobed yellow anther, whilst the two lateral ones are in the form of white, petaloid, trap-like processes. The ovary is half superior, half inferior, pyramidal, with four styles connate at the base, twisted above, and four cavities with axile placenta and numerous ovules. As the flower withers the stamens and styles become twisted together into a cord-like mass, leaving the white strap-like processes free. The anthers appear to open before the stigmas are mature, so that, although some of the pollen is shed upon the stigma, it does not necessarily follow that the flower is self-fertilised. The cohesion of the stamens into a strand while the filamental processes are free is perhaps an arrangement to secure the transfer of the pollen by some pollen-eating insects to the stigma of another flower. These details will only interest the botanist, but the plant-lover will appreciate the profusion of the white flowers disposed along the sides of the branches. The shrub is a native of Texas and New Mexico. At Kew it is grown against a wall.

APPROPRIATE.—When H.R.H. the Princess VICTORIA OF SCHLESWIG-HOLSTEIN attended the concert of the Magpie Madrigal Society in the Royal Horticultural Hall, on May 16, she was presented with a bouquet consisting entirely of black and white Pansies from the establishment of Messrs. DOBBIE & Co. The incident recalls

"The pansy freak'd with jet"

of MILTON'S "Lycidas." We do not look with favour on the use of flowers as political emblems, but there are occasions when particular flowers might be used without besmirching them with the taint of party politics. The QUEEN might carry the Rose, Shamrock, and Thistle, and if we omit the Leek it is only because the perfume might be objected to! The wife of the ARCHBISHOP might appropriately wear Canterbury Bells. The DUCHESS OF WESTMINSTER might bear a miniature sheaf of corn; and oak leaves or bays, forming part of the heraldic cognisance of some families, might be used in a like manner.

Publications Received.—*The Estate Magazine.* May. Edited by William Broomhall. Contents: Viscount Clifden's Cornwall Estates, Reclamation of Wastes by the Unemployed, Gardening Notes, Agricultural Notes.—*The Garden City.* May. The reports for the month are quite satisfactory.—*Agricultural News* (Barbados), April 28. We learn from this that a scheme for insurance against the effects of hurricanes is in progress. This would be of great benefit to agriculturists.—From the Imperial Department of Agriculture for the West Indies: *Seedling Canes and Manurial Experiments at Barbados.* Sir Daniel Morris is responsible for the publication of the results of most useful experiments lately carried on under his direction.—*Agricultural Bulletin of the Straits and Federated Malay States.* February. Edited by H. N. Ridley, Director of Gardens, and by J. B. Carruthers, Director of Agriculture. Contents: East Indian Dragon's Blood (certain species of Daemonorops), Rubber Notes, &c. —*Le Bambou.* April 15. This is the third number of a periodical published by M. Jean Houzeau de Lehaie, Ermitage, Mons, Belgium, and, as we have before stated, devoted wholly to articles and notes bearing reference to Bamboos.—*Journal de la Société d'Horticulture du Japon.* March 10. This contains a selection of articles in Japanese, written by native authorities, and many illustrations which would be more delightful if less tinged with Western and modern "impressionist" ideas. There is a pretty plate of Cypripedium Haynaldianum, but no mention upon it as to the size of the plant.

FOREIGN CORRESPONDENCE.

NURSERYMEN'S VISIT TO HOLLAND.

HAVING lately read that a number of the principal British nurserymen intend to pay a visit to Holland in the course of the month of June, on which occasion they wish to obtain some information about the Dutch nurseries in the provinces of Holland and Overysel, we venture to suggest to these gentlemen that they should extend their tour to Friesland and Groningen as well. By so doing our colleagues will be able to convince themselves that not only the above-named provinces of Holland deserve to be visited, but that the northern districts of this country also possess several considerable nurseries in no way inferior to those in other parts of the kingdom, and worthy in more than one respect of the visit of business men desirous of obtaining some notions of Dutch nurseries, and of comparing the different methods on the spot. By visiting Holland and Overysel only they would get an imperfect idea of this country. Should these friendly observations induce them to change their itinerary we are quite prepared to assist them with our business knowledge and experience. *Firma Anne Bosgra, owners of the Nursery, "Yphof," Bergum, Friesland.*

A CRY FROM ROME.

ENGLISH travellers, art students, and lovers of horticulture who have wandered into Italy as far as Rome need no reminding of the many objects of interest to be found there which are in one sense of the word international property. To tamper with the classic, artistic, or even the antiquarian treasures in such a place is to violate the feelings of many persons other than Italians, and there seems to be at the present moment some fear of an ancient and certainly an interesting building and its adjoining gardens being threatened by what may be considered the spirit of modern progress.

The Villa Borghese is an historic building of no mean repute, and its surrounding gardens are of world-wide renown. They are described and illustrated in every book of importance on the subject of Italian gardens, and were begun close upon three centuries ago. Subsequently they were extended by various eminent landscape gardeners, one of whom was an Englishman, Jacob Moore. The Villa Borghese must, early in its history, have acquired widespread renown, for we find that John Evelyn visited the place in 1644, and in his diary makes allusion to it under the date of November 17 of that year. Evelyn tells us that this garden abounded with all sorts of delicious fruit and exotic simples, fountains of sundry inventions, groves and small rivulets. He speaks of many other things, and again in the following April he appears to have paid a second visit. Other travellers have not been unmindful of the glories of these famous Italian villas and their gardens, among them Charles de Brosses, who visited Italy in 1739-40 and wrote a kind of diary not wholly dissimilar to that of Evelyn, and called "Letters from Italy." Although current in several editions in French, these letters were only translated into English ten years ago by Lord Ronald Gower, who says of the author that he was witty, kind, bubbling over with good nature, and with a face that may be compared with a fine old crusted bottle of rare Burgundy of his native land.

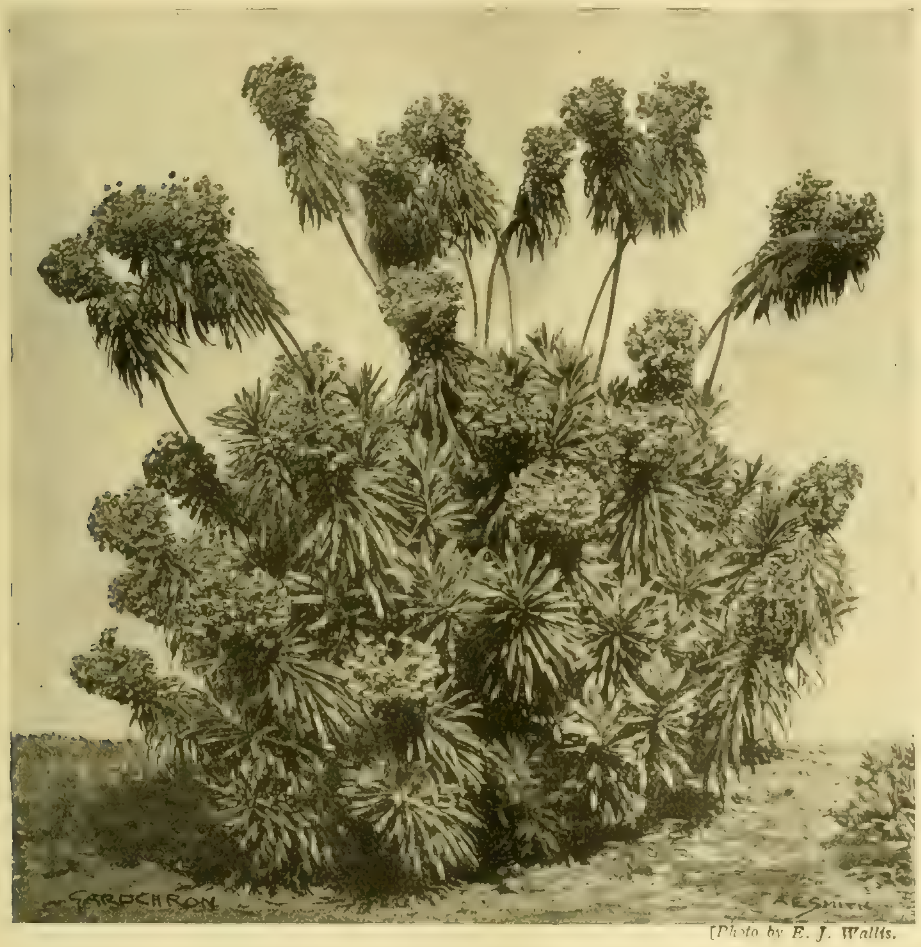
A few years ago the Villa Borghese was purchased by the Municipality of Rome for a large sum of money, and it is now the chief public park of that city. The place has been renamed the Villa Umberto I., and from some recent correspondence in *Il Giornale d'Italia* it seems that those in high authority contemplate making changes that will largely destroy the Villa and its historic and interesting gardens.

The newly-founded International Agricultural Institute, of which a good deal has been written in the public Press, and which has been largely approved of by influential persons in various countries, is to be installed in the grounds of the Villa Borghese. A portion of the grounds will also be allotted for the site of a museum in connection with the International Agricultural Institute, and so the lovers of this famous villa and its gardens are aghast at what they regard as an act of vandalism. Not only Italians, but foreigners resident in Rome, who have any regard for the Villa Borghese at heart, consider that unless this project can be averted the days of one of the most famous villas and its gardens are numbered.

Besides purchasing the Villa, the Municipality of Rome has also acquired a considerable area of land in the immediate vicinity, and here it is felt that whatever is required by the Government for the new International Institute of Agriculture might be secured without encroaching upon an historic building and gardens of so great interest as the Villa Borghese undoubtedly is, and which ere long, unless the contemplated steps are prevented, will exist only as a memory in the minds of those who are now raising their voices against such an act of destruction. *Amatore Inglese.*

EUPHORBIA WULFENII.

This handsome plant (see fig. 132) was first introduced into cultivation in the year 1837 by means of seeds sent from Italy. It has not, however, become a common plant, although it is one of the few hardy Euphorbias that when seen in good condition attracts attention on account of its striking appearance and early spring flowering qualities. Of sub-shrubby habit, the stems, which reach a height of more than 5 feet, are thickly clothed on the upper portion with whorls of strap-shaped, bluish-green leaves. The colour of the inflorescence may be described as a yellowish-green, which retains its freshness for some two or three months. It is a native of Dalmatia, and is perfectly hardy, while it also retains its leaves throughout the winter. This plant would make an admirable subject for planting in the wilder parts of the garden, in fern borders, or amongst shrubs. It may not be so showy as a Rhododendron, but it possesses a bold and distinct appearance, which is very effective. The other Euphorbias in cultivation which belong to this section are E. Characias, a native of Central Europe, of similar habit, but with yellowish-green flowers, having an almost black centre, and E. Sibthorpii, a native of Greece, with flowers having a brown centre. All are shrubby, and may be increased by dividing the plants in autumn or early spring. *W. I.*



[Photo by E. J. Wallis.

Fig. 132.—Euphorbia Wulfenii, a Dalmatian species of sub-shrubby habit. Height, 5 feet or more.

LEAVES FROM MY CHINESE NOTE-BOOK.

A JOURNEY IN EASTERN TIBET.

(*Continued from page 294.*)

June 13th.—Orang-che consists of half a dozen Tibetan houses, and is romantically situated in a narrow ravine, with dense forest clothing the left bank, and scrub-oak and scattered trees of Spruce on the right bank. Our inn was chiefly remarkable for the hosts of "Norfolk Howards" it contained; Keating's powder was useless, but a log of wood and a flat slab of stone proved effectual weapons. We were glad to escape at dawn, and it cannot be said we felt in any sense refreshed after the night's "rest." Our road continued down the ravine, which widened out into a narrow valley, and every bit of land available was cultivated with Wheat and Barley. The mountain-sides are very steep, and clothed with coniferous forests. Here and there clearings have been made, leaving the cliffs bare, except where they are covered with prickly scrub-oak. Selaginella involvens and Boea hygrometrica clothed the bare rocks alongside the road. Verbascum Thapsus and Incarvillea variabilis were common—sure indications of a warm and dry climate. We passed several houses and many ruins, and ultimately crossed the torrent—now of considerable size—by means of a good bridge of logs and brushwood. At the bridge I gathered a pretty species of Lilac. Between Orang-che and this bridge the commonest shrub was Rosa sericea, a mass of the purest white. The Abies, with loose bark, A. squamata (see *Gardeners' Chronicle* xxix., p. 299), so common in the upper limits of the forest, gave place to Abies Fargesii, a handsome tree with purple cones and useless timber. The Picea of yesterday was still with us, and a few Pines occurred. As we descended the Pines increased in number.

Below the bridge the valley narrowed into a ravine, but wherever it widened cultivation was attempted. At 11 o'clock we reached Pa-ko-la, halfway to Hokeou, and lunched there.

The road thus far had been very good. Two of the commonest trees alongside the road were Populus euphratica and Acer laetum var. tricaudatum. Near Pa-ko-la, Populus tremula was common. In a field I noted Spiræa Aruncus, and by the wayside I gathered Cypripedium himalaicum, Androsace sp., Cynanchum sp., and Phytolacca acinosa, with its rose-pink "pokers." From about three miles before reaching Pa-ko-la to five miles beyond the village one of the commonest roadside plants was Paeonia Delavayi. This species belongs to the Moutan section, and is closely allied to Paeonia lutea. Delavay's Paeony is a sub-shrubby plant 2 to 3 feet high, with rather finely-cut leaves and very dark maroon flowers, 3 inches across. It favours stony places exposed to the fullest sun. I venture to predict for this striking plant a hearty welcome from all plant lovers.

Leaving Pa-ko-la at noon, we continued to descend the ravine by a road at times fair, but for the most part execrable and dangerous. The mountain-sides were nearly vertical, and clothed with forest; the scenery wild and savage. We crossed and re-crossed the stream four times, and reached the village of Hokeou, alt. 8,800 feet, at five o'clock. The stream we followed from near its source received many tributaries, and carried down an enormous volume of water. It may be aptly compared with the Tatien-lu river, being quite as large and nearly as turbulent.

Hokeou, or Na-chu-ka, is a tiny village situated on a corner at the point of union of the Orang-che torrent with the Yalung river. It consists of about a score of houses, and is in charge of a small military official. Hokeou is walled in by lofty mountains, and has no room for expansion. On the opposite bank of the Yalung is the residence of a local chieftain. The Yalung, or, to use the native name, Nia-rong, is a very similar river to the Tung, and at Hokeou is about equal in breadth and volume to the Tung river at Luting-chiao. It sweeps past Hokeou in a curve with a fairly even current, broken above and below by minor rapids. It is crossed by ferry in summer, but in winter is bridged by pontoons.

The whole of our day's journey was down a narrow defile flanked by precipitous forest-clad mountains. In the upper part of the forest two species of Abies and a Picea form the bulk of the timber. From 11,500 feet downwards a species of Pinus assumes supremacy, though the Picea and Abies Fargesii in reduced numbers continue right along. The Pinus is a handsome tree, singularly like the Scotch Pine, with two leaves in the sheath, and very small cones. Many of the trees were 80 to 100 feet high, with a clean trunk for 50 to 60 feet. The wood is very resinous, and is valued for making torches and for general building purposes.

Next to the Conifers, the commonest constituent of the forest is an evergreen prickly Oak. On the high mountains this Oak is reduced to a shrub, often not more than a foot high, but in the forest it grows to a tree 20 to 30 feet high, and its leaves become larger and less prickly. This Oak is in all probability one of the many forms of Quercus Ilex. Acer Davidii, a species of Ash, and a Mulberry, were other common trees. Birch, Pyrus, Willow, and other small trees were abundant in places.

The ravine generally enjoys a warmer temperature than would be expected from its altitude. The rocks are principally slate, quartz, and hard sandstone, and when denuded of trees remain bare and arid. Down in the bed of the ravine a very rich flora occurs, and I gathered quite a large number of fresh plants.

The absence of Larch, Rhododendron, Deutzia, Hydrangea, and Viburnum was a marked feature of the day's journey. Paeonia Delavayi and a shrubby species of Clematis (C. Delavayi), having small pinnate leaves, silvery beneath, and white flowers the size of a four-shilling piece, were, perhaps, the most interesting plants of the day. In moist shrubberies Cypripedium himalaicum was common, and in heathy places down to 10,000 feet Incarvillea Principis was abundant. Rosa sericea, and, at lower altitudes, a species of Philadelphus, were the show plants of the day—bushes 6 to 10 feet, and as much in diameter, one mass of white! Buxus sempervirens was a common shrub, and the same may be said of several species of Lonicera and Ligustrum. A species of Wikstroemia with yellow flowers, Buddleia nivea, Potentilla fruticosa var., Spiræa spp., Pittosporum sp., Abelia sp., Sophora viciifolia, Paliurus sp., and two climbing species of Jasmine—one with white and the other with pink flowers—were other plants of interest noted during the day. Herbs were, of course, abundant, and I gathered quite a number of species of Pedicularis, Senecio, Anemone, Primula, Fritillaria, Polygala, terrestrial Orchids, and Ferns.—*E. H. W.*

(*To be continued.*)

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM "JEAN B. PEETERS."

This most beautiful variety appeared at "L'établissement Peeters" among plants imported six years ago. (Moral: Keep the little ones which are slow to bloom.) Mons. F. Peeters has sent me a painting which represents a 3½-inch bloom most beautifully proportioned and coloured. The sepals have a deep rose purple ground, heavily blotched with deep crimson brown; petals similarly coloured, and covered for two-thirds of their surface with a great horse-shoe blotch of the same colour as in the sepals. Lip broadly orbicular, having a horse-shoe shaped blotch of lighter brown, with a disc of very bright yellow, the column head being deep crimson. The petals lap over the sepals, making the form of the bloom excellent. It is worthily named in compliment to Mons. J. B. Peeters, one of the acting members of the firm. When this plant has become a large one it will take very high rank indeed among the numerous fine varieties that we now know, and which seem to vie one with the other to eclipse each other even as we "humans" do in acquiring them, nature truly aiding our fancies. *de B. Crawshay.*

COLONIAL NOTE.

PORT ELIZABETH AGRICULTURAL SHOW.

Horticultural Section.

This show, which was held on April 4, 5 and 6, was the very best ever held on the new show ground.

The Horticultural section had many more entries than usual, and the quality was much better than in the previous year. The exhibits in the amateur's classes were not so good as might have been expected, but this was partly owing to the show having been too early for Chrysanthemums. In the open classes the exhibits were very good. The best were two groups of plants arranged in spaces not exceeding 80 superficial feet. One was composed chiefly of Crotons, Dracænas, tuberous Begonias, and Chrysanthemums, with a large plant of Areca lutescens in the centre, exhibited from the St. George's Park. The other had a groundwork of Ferns; also Crotons, Dracænas, and Aralias, with a beautiful plant of Cocos Yatai in the centre which looked very fine, and Kentias at each end. The most attractive part about it were the splendid Lilies of the Valley, which showed up to the best advantage above the pleasing green of the Ferns. Some of the Lilies had from 15 to 25 bells open on one spike; there is no doubt that they are the best that have ever been seen in the "dark continent." They were exhibited by Messrs. Smith Bros. These two exhibits were awarded equal first prizes. There was a group of Ficus pandurata exhibited by Messrs. Smith Bros.; it was very effective, having a row of Lily of the Valley round it; a special prize was awarded to it.

Other classes which were worthy of special mention were as follows:—In the class for six plants (Crotons) a plant of the variety Jupiter was 5 feet high; every leaf was superbly coloured, and the plant was evenly furnished down to the pot. Hawker and Queen Victoria were also very good.

One piece of Adiantum tenerum Farleyense was 3 feet through. Six Coleus plants from St. George's Park were very good, well-grown specimens, and the difference in colour and variety was particularly good.

The best foliage plant was a very fine specimen of Cocos Yatai, its elegant habit and silvery colour left little doubt as to the best specimen; it was 8 feet high. The cactus Dahlias exhibited in tins were very good considering the time of the year.

In the cut flower classes the cactus Dahlias exhibited by Mr. S. Brett and from the St. George's Park were very choice, they were awarded equal first prizes.

The bridal bouquets were also awarded equal first prizes, but why this was done did not appear, for one was well made of Lily of the Valley and worth £5, and the other was not worth £2. Why the judges could not decide which was the best exhibit in four instances out of 24 classes ought to have been explained.

In the fruit section there were not so many entries as one would like to have seen. The collections of Apples were very good for the month of April.

The collection of Grapes exhibited by C. J. Howlett were very good, considering they had been packed in boxes for two days. For the best collection of Pears there were two exhibits, the first prize lot had four dishes, they were nice large even Pears, but there being only one dish of ripe specimens it was not satisfactory. *Interested.*

HOME CORRESPONDENCE.

(*The Editor does not hold himself responsible for the opinions expressed by his correspondents.*)

Delphiniums.—No special societies yet exist to further the claims of such fine hardy plants as the majestic perennial Delphiniums and the perennial Phlox. The Pæony is usually treated to a little shelter, so as to be in time to make a display at the Temple Show. It is too early for Delphiniums and Phlox, which, moreover, might resent coddling. No special occasion for their display follows subsequently, although the summer show at Holland House, might be appropriate for the Delphiniums. It might contribute to the raising of these two relatively neglected plants, the Delphinium and the Phlox, to a plane somewhat higher than they have hitherto enjoyed, were the Council of the Royal Horticultural Society to arrange two different dates from among the dates of the July and August fortnightly meetings, when all lovers of these plants might be solicited to make a simultaneous display. This opportunity would not be lost upon numerous admirers, and a great spread of the love of these plants might be evolved. I trust the matter may find favour, and that the Council may be induced to issue an early invitation in the columns of the horticultural press, so that fine displays may be seen even in this coming summer. *H. H. Raschen, Sidcup, Kent, May 20, 1906.*

The Fruit Prospects in South-East Essex.—So far as Apples are concerned the crop for the year 1906 promises to be a most bountiful one in this part of Essex, all the trees being furnished with large trusses of healthy, well-developed blossoms, upon which the recent frosts have had no ill effects—thanks to the vigour and dry condition of the blossoms. But the April frosts spoiled the prospect of the Pear, Plum, and Cherry crops, which will amount to very little. However, as far as the general public is concerned, the lightness or even total failure of the Pear, Plum, and Cherry crops does not count for much so long as the crop of, to them the most important fruit, the Apple, is a prodigious one. A drive through the rural districts is very enjoyable just now, when the Apple trees in the orchards that present themselves on every side are densely covered with the fully expanded blossoms of pink and white. Gooseberries and Currants will be a light crop, but Raspberries will be plentiful. *H. W. Ward, Lime House, Rayleigh, May 19, 1906.*

Schizanthus.—Having recently read several letters respecting Schizanthus, I made a journey to Cote House, Westbury-on-Trym, to see Mr. Bannister's collection. On arriving at Cote House I was taken to a house where the choicest plants in the collection are grown. It was delightful to see such a display of colour as was there. On the side stage of the house were about 50 plants of both the light and dark coloured varieties, and I do not think there were two plants of the same colour; they were growing chiefly in 6-inch pots, and not only were they well grown, being of good bushy habit, but the individual flowers were very fine. I have seen nothing to equal this collection, for there are some of the most delicate shades of colour, as well as the rich shades among the darker varieties. These plants are easily grown, and being so graceful in habit, they are useful not only for cultivation in pots but for supplying flowers for cutting purposes. They will remain in good condition in water for a long time, and every bud will open perfectly. Mr. Bannister has a large number of plants for a later display. *H. Noble, Ashton Court Gardens, Bristol, May 15, 1906.*

Silver Leaf in Laburnum.—I am sending for your inspection a portion of a twig of Laburnum, which shows plain signs of "silver leaf disease." Generally the disease appears on leaves of Plums, Cherries, Peaches, Apples, and Laurel-Cherries, and I have not been able to discover any record of its appearance on Laburnum. Prof. Percival, who has made careful and exhaustive inoculation experiments with the view of finding the cause of this malady, ascribes it to the action of the fungus Stereum purpureum, which is confirmed in this case. There are three shrubs of Laburnum growing within easy distance of each other, and only one of them shows the silvery leaves, and it is interesting to note that a portion of the shrub is killed and covered everywhere with the growth of the Stereum fungus. The other two shrubs are still perfectly healthy, and bear normal foliage. *Hans Gussow.* [This is, we believe, the first time this disease has been found on any other than Rosaceous plants. When we received the specimens the leaves were withered and the silvery appearance was not very conspicuous. Ed.]

Lisianthus Russellianus is now so seldom seen either in private gardens or in trade establishments that I received quite a surprise recently on being conducted through the glass department in Miss Alice de Rothschild's superb domain at Eythorpe. The superintendent, Mr. Gibbs, called my attention to a batch of 100 or more plants of this attractive Lisianthus, healthy, vigorous little plants which promise to give a charming effect in a few months' time with their bluish, violet-tinted flowers. This stock of plants was raised from seed saved at Eythorpe last summer by Mr Gibbs from a single plant which he got up from seed purchased the previous year. I have invariably found that seed of this Lisianthus purchased from the seed-merchants is very shy of germinating, and I cannot but think that these small seeds lose their vitality in a comparatively short time, and, consequently, that the failure generally experienced to raise stock from seed offered by the seed-merchants is due to the seeds having been imported, and possibly to being two or more years old before they are sown. Judging by Mr. Gibbs's success with home-saved seed we need not despair of again seeing this plant largely contributing to the summer-embellishment of our greenhouses and the warmer borders out of doors. To mention the name of Eythorpe to a horticulturist and to omit any reference to Miss de Rothschild's marvellous collection of Carnations would be unpardonable. I have many times seen her Carnations since she first seriously undertook their cultivation, but I never before saw them in such good condition as they are now in. There are hundreds of plants in 9-inch pots that were propagated during the August of 1904, and they have from 18 to 24 strong, healthy shoots furnished to their base, with foliage of the substance and colour of Leeks. Every shoot is set with flower buds, and there is not the slightest trace of rust or the after mark of an aphis on them, which shows the very high standard of cultivation attained at Eythorpe. The younger stock, now about nine months old from the layering period, is in every respect equal in condition to the older plants, and this notwithstanding that the plants are standing "pot to pot." In addition to all the standard varieties of the "Malmaison" and the summer-flowering tree sections, there are numerous seedlings raised at Eythorpe which, if tabled at Vincent Square, would, I believe, not only win the admiration, but excite the envy of amateur and trade growers. *J. Jaques.*

Spring Cabbages.—My experience with spring Cabbages has been exactly the same as described by Mr. Gibson on page 315. In a large bed containing several varieties not a single plant of Sutton's "Flower of Spring" or of the newer variety "April" has bolted, while of "Ellam's Early Dwarf" quite a large proportion is showing flower. The variety "Enfield Market" is, however, quite the worst offender in this respect, very few being useable. Such experience seems to prove that the newer varieties are much more reliable in this district than the older ones named above. All the varieties were sown and also planted out at the same time, and have been given exactly the same treatment. I have grown "Flower of Spring" for about seven years in Ireland, and the variety "April" since its introduction, and have found both very satisfactory. *J. G. Weston, Eastwell Park Gardens, Kent.*

Observations on Exhibiting Vegetables.—To be successful in obtaining the highest awards, every detail must be carefully studied. Perseverance should be practised, and an endeavour be made to make the points that were weakest last time the strongest on the succeeding occasion. I have often noticed that prizes are lost, especially when exhibiting collections, by the inclusion of some particular kind of vegetable that is not in accordance with the general exhibit for the season. Unfortunately, there are not sufficient prizes awarded for distinct varieties of vegetables at our leading shows. If prizes were offered for individual varieties, there would, no doubt, be good competitions. For instance, prizes are often offered for a "Dish of Carrots," and exhibitors may show either Intermediate or Stump-rooted varieties. In such a case it becomes a question which variety should be given the highest award; but, as a rule, it is accorded to the Intermediate. There are also many other kinds that could be more properly defined, such as Beet, Lettuce, Celery, Tomatos, &c. In exhibits of Tomatos we seldom find many of the Yellow and Peachblow varieties, but why? Is it because the red varieties have generally been given the precedence? Classes should be set apart for the Dessert and Yellow varieties. The chief value in classes for separate kinds and varieties is that they bring out the highest possible type of any variety to perfection. Classes for salads and herbs should also be instituted, as they would prove interesting. Prizes for collections of vegetables are usually offered for six, nine or twelve kinds. Cauliflowers, Potatos, and Carrots should be included throughout the season, making up the six dishes with Tomatos, Onions, and Peas, according to the season; failing Peas, use Celery. For a collection of nine kinds at early shows must be added French Beans, Marrows, Globe Artichokes or Beet. At mid-season shows, Cauliflowers, Potatos, Carrots, Onions, Celery, Leeks, Peas, Tomatos, and Runner Beans. Later in the season Sprouts and Parsnips should take the places of Peas and Runner Beans. An exhibit of 12 kinds early in the season should include Cauliflowers, Potatos, Carrots, Tomatos, Onions, Peas, French Beans, Marrows, Beet, Turnips, Cucumbers, and Globe Artichokes, or Broad Beans. At mid-season shows substitute Parsnips, Runner Beans, Leeks, and Celery in places of Marrows, French Beans, Globe Artichokes, and Cucumbers. At late shows the 12 dishes should consist of Cauliflowers, Potatos, Carrots, Tomatos, Onions, Beet, Turnips, Parsnips, Leeks, Celery, Sprouts, and Cabbages. In exhibits of collections the number of each vegetable exhibited as a dish should be the number stated in the schedule. Failing this, the judges should take it into consideration that a certain number is sufficient to form a dish. Prizes should be given for good arrangement, and a certain amount of space should be allowed as a standard for a collection of so many kinds. This would be welcomed by all exhibitors, as then they could have their staging made complete beforehand. *W. J. Pritchard, Elstree.*

Saxifraga Boydii.—I am much obliged to Mr. Boyd for placing on record (see p. 301) the history of this plant, and I doubt not many who grow choice Alpines will also be grateful for the information. Hitherto the general assumption in southern circles has been that the plant was the result of artificial pollination, and I had this idea in my mind when I wrote concerning it. It is, however, interesting to know that the plant is what may be called a chance seedling, and this fact should stimulate those possessing collections of choice plants to look out for seeds or seedlings. Not a few of these rare and choice Saxifragas seed but rarely when left to themselves, and I have long since thought this to be in large degree due to frost injuring the stigmatic lobes when these are in the receptive stage. Greater success is achieved when later in the season a stray flower opens, and in all probability it was a late stray blossom that gave us S. Boydii. Only in some such way as this could a stigma of S. Burseriana receive pollen to be influenced thereby by the much later flowering S. aretioides. One is more than interested to learn that S. "Faldonside" is regarded as superior to S. Boydii. *E. H. Jenkins.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

May 15.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Messrs. Massee, Douglas, Boulger, Nicholson, Hemsley, Worsdell, Sutton, Güssow, and Saunders; Rev. W. Wilks, M.A.; F. J. Chittenden (hon. sec.). Visitor, Mons. P. de Vilmorin.

Beetles on Pine.—Mr. Saunders reported that the trees from Brandon Park shown at the last meeting are attacked by the Pine beetle, Hylurgus piniperda. The best thing that can be done is to go carefully through the plantation and pull up and burn every tree that shows the least signs of being infested by this insect. The grubs, which do far more harm to the trees than the parent beetle, cannot be reached without barking the trees. It is certain that this insect does not attack healthy trees unless there are no dead or dying ones for them to breed in; so that in a plantation, when a tree begins to show signs of want of vitality, it should be at once removed.

Injured Vine Leaves.—Mr. Massee said concerning those referred to him at the last meeting: "There is no specific injury caused by fungi or insects. The discolouration is due to sunlight falling on leaves covered in places with a film of moisture. Ventilation in the early morning would prevent this."

Coloured Tendrils of Sweet Peas.—Referring to this matter, raised at the last meeting by Mr. Cuthbertson, Mr. Bateson, F.R.S., writes: "We have kept note of this character as far as possible in our work. The red tendrils are (? always) associated with red in the axils of the leaves. In our records we have spoken of this feature as 'dark axil,' the opposite as 'light axil.' The 'dark axil' character may be present in any Sweet Pea, whether the flowers are coloured or white, but it is not developed unless the flower is *in some degree* coloured, we believe. There are 'whites' with dark axils, e.g., the black-seeded form of Mrs. Sankey; but we think the whitest of such flowers always have a trace of colour in the keel. At all events, there is no dark-axil plant which does not have a black seed coat."

The following table shows the various results occurring in the crosses. The first distinction to be drawn is between whites bearing *the dark-axil character*—call it (D), or its absence (d). By crossing with a coloured flower light-axil variety the point can be settled, for the (D) white will then give a dark-axil crossbred, whereas the (d) white gives a light-axil crossbred, thus:

Coloured flower (d) × white (D)
F_1 coloured flower, dark axil.

But:

Coloured flower (d) × white (d)
F_1 coloured flower, light axil.

Then:

Coloured flower dark axil × white (D)
F_1 coloured flowers, dark axil
F_2 3 coloured flowers all dark axil : 1 white light axil (D)

But:

Coloured flower dark axil × white (d)
F_1 coloured flowers dark axil
F_2 9 coloured flowers dark axil 3 coloured flowers light axil 4 white

These four white are all alike in appearance, but are really

1 D D (pure to dark axil) : D d (crosses between dark and light axil) : 1 d d (pure to light axil).

Excepting in rare and doubtful cases, white flowered plants have light axils, but they may possess the factor which makes dark axils *if it meets flower-colour.* There are thus two kinds of white-flowered plants:—

A, White-flowered *bearing* D, the dark axil factor.
B, White-flowered *without* D.

Both A and B have light axils in fact, and to the eye, but if A be crossed with a coloured-flowered, light-axil variety, F^1 will be coloured flowered with dark axils; while if B be crossed with the same coloured-flowered light-axil variety, F^1 will be coloured flowered with light axils. In the case where two whites crossed give a coloured F^1 this will have dark axil or light axil, according as one or both of the whites bore dark axils or neither.

If neither bore dark axils this F^1 will have light axils, though the flowers are coloured.

It follows that every light-axil plant must breed true to light axil, but a dark axil plant must either

1, Breed true to dark axil
or 2, Give 3 dark : 1 light
or 3, Give 9 dark : 7 light
&c., &c.

Tropæolum with Two Spurs.—Mr. Worsdell said that several theories had been brought forward as to the morphological value of the spurs of Tropæolum. Some had regarded the spur as an outgrowth of the axis of the flower, and the flower with two spurs had been regarded as supporting this theory, since if the spur were an outgrowth of the calyx, a multiplication of spurs would apparently involve a splitting of the calyx, which had not occurred in the case under investigation.

Solanum Commersoni and its Alleged Sports.—Mons. P. de Vilmorin, who was heartily welcomed by the chairman in the name of the committee, contributed some remarks upon the alleged sport of Solanum Commersoni, a matter which has already been brought before the committee by Mr. Sutton and others. Mr. Sutton suggested that the Wisley Sub-committee should be requested to grow side by side for comparison Mons. Labergerie's violet variety, and Blue Giant, which it so greatly resembles.

Uredo Polypodii on Cystopteris.—Professor Boulger showed a specimen of this rust fungus from Matlock growing on Cystopteris fragilis.

Galls on Gooseberry.—Mr. Saunders showed some gall-like growths from a Gooseberry bush, the whole of the bushes in the garden being similarly affected. These growths were attributed by some members to a Phytoptus, but none was to be seen at this stage, and by others to injury by frost, followed by a great production of callus.

Reversion in Auricula.—Mr. Douglas showed an Auricula bearing yellow flowers with serrated edges, almost identical with figures published 170 years ago of Primula Auricula in size, colour and form of flowers. It was an interesting example of atavism, since it was raised from seed of a show type of Auricula having an even white edge and an almost perfectly black ground.

Insects Eating Iris.—The grub of a moth which was found eating Iris sibirica and I. Delavayi, but not other species, was sent by G. Yeld, Esq., of York. Mr. Saunders took the specimen for further examination.

Irises Dying.—Through Mr. Lynch came specimens of Iris spuria var. A. W. Tait, from Rev. Rollo Meyer, of Ampthill, Beds., the stems of which were rotting, the leaves being marked with pale spots; other species had been attacked, and where the "German" Irises were the victims the rhizome became affected as well as the lower part of the leaf. Lime had been found to improve the plants greatly. Mr. Nicholson said that some years ago at Kew many Irises were similarly affected, and the trouble was then found to be due to the attacks of a bacterium, and lime proved a good specific in that case also.

Fungus Galls on Azalea.—Dr. Masters showed galls on the buds of Azalea indica received from Bruges as large as filbert nuts in the husk, and of a pale green or reddish colour, though otherwise similar to those seen on some species of Rhododendron caused by Exobasidium rhododendri.

Sports.—Mr. Holmes, F.L.S., sent a very fasciated specimen of Fritillaria imperialis bearing three or four times the normal number of flowers; also pale pink flowers of the common Bluebell, a wild form which had remained constant for four years; and a specimen of the well-known Jack-in-the-Green Primrose, but having eight sepals and six petals.

Plants exhibited.—Richardia Rehmanni. A plant of this species with puce-coloured spathe came from Col. C. O. Hore; it is rarely seen in cultivation. Mr. R. Irwin Lynch, V.M.H., of the Cambridge Botanic Gardens, sent a large number of rare and interesting plants as follows:—Sandersonia aurantiaca, a climbing Liliaceous plant, very interesting, for comparison with its near allies Littonia and Gloriosa, the foliage being very similar in these three distinct genera; Gladiolus tristis, which proves hardy on a border beneath a wall; Lonicera tibetica, a newly-introduced plant (see *Revue Horticole*, 1902, p. 448), quite unlike the majority of the Honeysuckles; Erinacea pungens, a beautiful plant with inflated pale greenish calyx tinged with heliotrope, and a darker corolla, coming between Ulex and Spartium; Coronilla Emerus, from a plant collected at Interlaken; Cotyledon undulata (*Botanical Magazine*, t. 7931); Lathræa clandestina, a parasite on roots of Willow, with beautiful rosy-lilac flowers and white bracts (see *Gardeners' Chronicle*, 1904, May 7, p. 292); Solanum Xantii (fig. in *Botanical Magazine*), a Cambridge introduction; Heterotoma lobelioides, the "Bird Flower" of Mexico, a curious plant, belonging to Campanulaceæ; Richardia cantabrigiensis (R. Rehmanni × R. melanoleuca), a hybrid raised at Cambridge, showing intensification of the pink colour of the female parent; Tropæolum azureum, a rare and beautiful greenhouse perennial from Chili; Fendlera rupicola, monotypic and allied to Philadelphus and Carpenteria, a native of Texas and Mexico; Bomarea patacoensis, Herbert (Amaryl., 120, t. 14) = B. conferta of *Gardeners' Chronicle*, 1882, 186, t. 31; Centaurea crassifolia, with very fleshy leaves, peculiar to Malta, a sub-shrubby plant introduced by Rev. Professor Henslow; Orobanche ramosa flore alba; a good yellow form of Pæonia Wittmanniana; P. Emodi, a very tender plant, and the beautifully-coloured P. officinalis lobata; Iris Korolkowi and the beautiful hybrid forms I. Korolkowi × iberica, I. Korolkowi × vaga, I. paradoxa × Korolkowi, I. iberica × pallida, a very fine and easily-cultivated border plant (these hybrids were of Sir Michael Foster's raising); I. biflora gracilis, probably a hybrid between I. virescens and I. nudicaulis; I. benacensis (not yet figured), an early-flowering sweet-scented purple species; Anthemis cupaniana, a species which Mr. Lynch believes to be new; Cheiranthus mutabilis, one of the parents of C. kewensis; Euphorbia polychroma, E. spinosa, and E. serrata. A vote of thanks was unanimously accorded to Mr. Lynch for his kindness in sending the interesting plants mentioned above.

REDHILL, REIGATE, AND DISTRICT GARDENERS'.

May 7.—The first of the summer out door meetings held under the auspices of this Association took place on the above date, when about 80 of the members availed themselves of the opportunity afforded by the kind permission of Sir Trevor Lawrence, Bart., and of her Grace Lily Duchess of Marlborough, to visit the Gardens at Burford Lodge and Deepdene respectively.

The Orchid houses, herbaceous garden, and pleasure grounds at Burford afforded much that was interesting. After partaking of tea at the Star and Garter Hotel, the party went on to Deepdene and inspected the Carnations, Orchids, fruit gardens, and pleasure grounds of this famous estate. The Rhododendrons, for which Deepdene is famous, evoked much admiration. *F.L.*

MANCHESTER AND NORTH OF ENGLAND ORCHID.

May 10.—This was the last meeting of the 1905-1906 session, and there was a capital display of plants.

The members of the Committee present were: Messrs. Warburton (Chairman), Leemann, E. Ashworth, R. Ashworth, Sander, Cowan, Upjohn, Shill, Rogers, Ritchie, Parker, Thorpe, Cypher, Williamson, Schofield, Smith, Ashton, Duckworth, Weathers (Hon. Sec.).

H. T. Pitt, Esq., Stamford Hill, London, provided the great treat of the meeting in a display of magnificently grown Odontoglossums. O. crispum Pittianum, with a splendid spike of flowers, was awarded a Gold Medal. This superb plant needs no further description here; suffice it to say that the Society felt proud to have such a gem at their meeting. O. crispum var. Capartianum received a First Class Certificate. This plant was another model of good cultivation. The wonderful O. crispum var. Ashworthianum, which might be described as a mass of violet purple colour with a white margin, was also exhibited, but as the plant had been disbudded no award could be made to it. We hope to see it again in the same rude health as the two foregoing varieties. Mr. Pitt is to be sincerely congratulated on his display. The most extraordinary variety of Odontoglossum shown was named O. crispum var. aurea excellens. To all appearances this lovely flower is a pure variety of O. crispum, but the Committee by vote decreed that such was not the case. It really has as much claim to be considered a form of O. crispum as many varieties, but doubts as to its pedigree cannot detract from its beauty, and it is one of the most lovely Odontoglossums ever seen. O. crispum aureum excellens was exhibited by Messrs. McBean, of Cooksbridge, Sussex. [Since given a R.H.S. Award of Merit under the name O. crispum aureum laburnum.—Ed.]

Mr. John Robson, Altrincham, exhibited a nice set of Odontoglossums, viz., O. crispum var. Raymond Crawshay, O. c. var. Excelsior, O. × Golden Queen, O. c. var. Mrs. Peeters. (Vote of Thanks.)

Mr. A. A. Peeters, Brussels, exhibited Odontoglossum crispum var. "Uccle," named, I believe, after his establishment near Brussels. It is a fine spotted variety, and was awarded a First-Class Certificate. (16 votes to 2.) O. × Lambeauianum was shown by the same exhibitor.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), obtained an Award of Merit for a pretty variety of Odontoglossum crispum named "Princess Ena," and was awarded a Silver Medal for a very good group of miscellaneous Orchids.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), was awarded a Silver Medal for a well-staged group of plants, in which were several nice forms of Cattleya Mendeli and some good Odontoglossums.

P. Smith, Esq., Ashton-on-Mersey, obtained a Silver Medal for a group consisting of Cattleyas, Odontoglossums, and a good plant of Oncidium lamelligerum.

R. Lea Doux, Esq., West Derby (gr. Mr. Davenport), was given a Vote of Thanks for a small group of plants, in which varieties of Odontoglossum crispum were conspicuous.

Messrs. Keeling & Sons, Westgate Hill, near Bradford, exhibited a small group, principally of Cypripediums.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), obtained a Silver Medal for a well-grown collection.

J. W. Moore, Ltd., Rawdon, near Leeds, staged a small group, in which was Dendrobium × Euterpe, var. "Olive Jessop."

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), obtained a Cultural Certificate for a fine plant of Phalænopsis Rimestadtiana.

Messrs. Cowan & Co., Ltd., exhibited a natural hybrid Odontoglossum.

The annual general meeting was held in the afternoon, with a good attendance of members. The honorary secretary's report was read and adopted. The finances of the society were shown to be in a good condition, and the work of the past year was of an excellent character. A rule was passed which will allow members in the coming session to exhibit disbudded plants.

Mr. Elijah Ashworth was elected chairman, Mr. A. Warburton vice-chairman, Mr. S. Gratrix treasurer, and Mr. P. Weathers, hon. sec.

The next meeting will be held at the Botanical Gardens in Whit week. *P.W.*

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

May 14.—The usual monthly committee meeting of this society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on the above date, Mr. C. H. Curtis in the chair. Ten new members were elected and one nominated. Two deaths were reported. Nine members were reported on the sick fund. The amount paid for sickness since the last meeting was £29 8s.

ROYAL BOTANIC.

May 16.—At this meeting one of the most interesting exhibits was from Sir F. T. Barry, Bart, M.P. (gr. R. Brown), who staged a large collection of Camellias, all cut from plants growing in the open ground. Several of the varieties were those raised in the gardens at St. Leonard's Hill, Windsor. A very fine, pure white single variety, Lady Barry, was awarded a Certificate of Merit. Sir F. T. Barry, a crimson single, was a good variety, but had suffered a little from the weather. In a conversation with the gardener we gathered the information that all plants intended for planting out were kept as cool as possible and growth retarded until April, when they were planted in the open, thus giving the plants the chance of making their growth at the proper period, and well maturing it before the autumn frosts. This is a point which many fail to recognise in planting out Chinese and Japanese plants. Under glass they mature their growth early, and if planted out in the summer they are sure to start into growth early the following spring, with the result that they will suffer from the late frosts, and have no chance of recovering to make their natural growth.

Among other exhibits Tulips were well shown by various exhibitors, and several were awarded Certificates of Merit. Of these the rich deep yellow W. T. Ware was one of the best. La Rêve and Inglescombe Yellow also received awards.

Some remarkable blooms of Calla Elliottiana came from Walpole Greenwell, Esq., Croydon.

Mr. S. Mortimer was given a First-Class Certificate for Tomato Sunrise, a very prolific, early, small-fruited variety.

Trollius Lemon Queen, from Mr. Amos Perry, received a Certificate of Merit. It is a very pretty, clear, pale yellow variety.

There were numerous other exhibits, but most of them were referred to in the report in last week's issue of the R.H.S. meeting.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY.

May 18.—A largely-attended meeting of gentlemen interested in forestry was held in the Douglas Hotel, Aberdeen, on the above date, with a view to the formation of a branch of the above Society at Aberdeen. Mr. W. Stewart Fothringham, of Murthly, president of the parent society, occupied the chair. The meeting was held in accordance with the important step that has been taken by the Royal Scottish Arboricultural Society to form district branches throughout Scotland as at Aberdeen, Inverness, Perth, Glasgow, and, possibly, also at Dumfries, for the southern counties. The Aberdeen branch is to include the counties of Aberdeen, Banff, and Kincardine.

There was a large attendance of proprietors, factors, and foresters.

Mr. Crozier, forester, Durris Estates, moved that a branch of the Royal Scottish Arboricultural Society be formed in the Aberdeen district. Mr. John Clark, forester to the Earl of Aberdeen, Haddo House, Aberdeenshire, seconded, and the motion was agreed to unanimously.

Mr. France moved that Mr. Gordon, of Newton, be appointed president. The motion was enthusiastically agreed to.

Four vice-presidents and a committee of 12 persons were elected.

Mr. Robert Scott, solicitor, Aberdeen, was appointed hon. secretary and treasurer of the branch.

HEREFORDSHIRE FRUIT GROWERS AND HORTICULTURISTS.

May 19.—About 40 members of the above Association spent an interesting and instructive day in the neighbourhood of Ross (Herefordshire) on the above date. The majority of the party arrived in the town by the 10.25 train, and were driven to Mr. H. F. Getting's 50 acres of fruit plantation at Glewstone. A couple of hours were pleasantly spent in inspecting the fruit trees, their method of culture, pruning, spraying, and manuring, and comparisons were made with other plantations. The excursionists were driven in the afternoon to Caradoc to inspect Mr. E. W. Caddick's fruit and market gardening grounds, which cover an extent of 19 acres. A tour was made of the extensive vineries and glasshouses, both at Caradoc and Caradoc Court, the magnificence of the flowers, &c., and the beauty of the delightfully-laid-out grounds being much appreciated.

NATIONAL TULIP.

May 23.—The thirteenth annual exhibition was held on the above date in the Royal Botanic Society's gardens, Regent's Park, the society revisiting these gardens for the first time since 1898. The show, considering the season, was up to all expectations, some of the flowers being of excellent quality. The untoward weather, however, prevented some champions from contesting, while Mr. Bentley was only enabled to send a small number of flowers of moderate quality. On the whole, the show must be judged as not quite up to that of last year. The Cambridge growers were well represented, and were enabled to send some excellent flowers, while for Miss Willmott's exhibits nothing but praise is to be bestowed. It is very gratifying to the society to see so many new competitors, for the present list of competitors comprises almost all newcomers since the last exhibition held in these gardens, now eight years ago. The trade groups were all good, and required much careful scrutiny by the judges in order to appropriate the awards. Flamed bizarre flowers, as a rule, were weak in quality.

The premier class for 12 dissimilar rectified Tulips, to include two feathered and two flamed flowers of each class, was represented by four entries. The best were shown by Miss Willmott, Warley Place, Great Warley, who had flowers of bold substance and good markings. Her varieties included Sir J. Paxton, Modesty, Dr. Hardy, a fine flamed byblœmen, Guido, Mrs. Collier, Bessie, Adonis, Mabel, an excellent flower, Duchess of Sutherland, Annie McGregor (fine colour), and Wm. Annibal, a beautiful feathered byblœmen. 2nd: Mr. A. D. Hall, Harpenden, with good flowers of Mabel, feathered rose, Attraction, an exceptionally good flower with beautiful pencillings, and Talisman, feathered byblœmen. 3rd: Mr. W. Dunn, Cambridge. 4th: Mr. A. Chater, Cambridge.

The class for six dissimilar rectified Tulips, to include one feathered and one flamed flower of each class, was contested by six exhibitors. The first prize fell to the same grower as in the preceding class, the varieties being Queen of the May, Modesty, Wm. Annibal (grand specimen), Talisman, Sir J. Paxton, and Annie McGregor, the last named being a superb example. Mr. A. D. Hall was again second, his best flowers being Mabel, an excellent specimen, Sir J. Paxton, Universe, and Attraction. All the feathered flowers were good in this exhibit. 3rd: Mr. J. Bentley, Middleton, Lancashire, who showed a remarkably good specimen of Bessie, a feathered byblœmen.

In the class for three feathered Tulips, one of each class, Mr. Hall led with the varieties Sarah Ann, Bessie, and Wm. Annibal. 2nd: Miss Willmott, with Masterpiece, Modesty, and Adonis.

In the similar class for three flamed Tulips, one of each class, Mr. Bentley was first with three very level blooms of good colours in Annie McGregor, Talisman, and Sir Joseph Paxton. Miss Willmott's second prize group contained a very bold specimen of Annie McGregor.

The class for six dissimilar Breeder Tulips furnished something unique in that the first prize was taken with six seedling flowers shown by Mr. A. D. Hall. Diana Vernon is a "rose" seedling of much merit, Eos is another fine thing, Skarpheddin is the pecular shade of chocolate-brown seen in Sir J. Paxton. 2nd: Mr. W. Dunn, whose best examples were Goldfinder, Mrs. Barlow, and Talisman. 3rd: Miss Willmott, with good flowers that would undoubtedly have taken the first prize, but for a bad specimen of Samuel Barlow.

The best stand of three dissimilar Breeder Tulips was put up by Mr. W. Peters, Cambridge, who had John Heap, Elizabeth Pegg, and Lloyd's 200 2nd: Mr. W. Dunn, whose best examples were those of Mrs. Barlow and Agnes.

Samuel Barlow Prizes.

These prizes are offered in memory of the late Samuel Barlow, and are for the best pair of rectified Tulips, one feathered and one flamed of any class. The premier prize was won by Mr. A. D. Hall with examples of Sir Joseph Paxton and George Hayward, the latter flower being of exceptional substance and vigour. Mr. A Chater took the second prize with Modesty and Wm. Chater.

Classes open only to growers of fewer than 400 bulbs.—The principal class in this section was for six dissimilar rectified Tulips, two of each class, eithered feathered or flamed. The premier place was secured by Mr. R. W. Hall, Harpenden, whose example of Sam Barlow was remarkably good. Mr. J. F. Kew was first for three feathered Tulips, one of each class, with Sir Joseph Paxton, Universe, and Aglaia. 2nd: Mr. Hall. Mr. E. Chater, Salisbury, had the best three flamed Tulips, and Miss Hardcastle, Harpenden, the best three dissimilar Breeder Tulips.

Garden Tulips.—These classes are an innovation, but the response was poor, and the few competitors who entered had it all their own way. For twelve varieties of garden Tulips Mr. W. C. Bull, Ramsgate, was the only exhibitor, but his flowers were excellent, and received the first prize. His best specimens were Mrs. Moon, Emerald Gem, Parisian White, Gala Beauty, a magnificent vase, and Faerie Queen. Mr. Bartlett, Shooters Hill, had the best six varieties of Darwin Tulips, and the best six varieties of garden Tulips, while Mr. Bull was the only exhibitor for a group of Tulips arranged for effect.

Premier Flowers.—The premier Breeder Tulip was the new Diana Vernon, shown by Mr. A. D. Hall. The premier "feathered" Attraction, also shown by Mr. Hall. The premier flamed Tulip, Mabel, shown by Miss Willmott.

Non-competitive Exhibits.

Four excellent collections of Tulips were staged by trade exhibitors. A brilliant collection comprising over 100 varieties in 170 vases was shown by Messrs. Alex. Dickson & Sons, Newtownards, Co. Down. The flowers were quite the largest shown, and were remarkably fresh and bright. May-flowering and Cottage varieties predominated, but flowers of most types were represented in the group. Among the "Darwins" may be mentioned Enchantress, with flower of salmon colour, shaded with pale terra-cotta; Gold Vase, a finely-formed flower, large, with gold tint flushed with deeper bronze; Europe, a fine scarlet flower, with pleasing white base; Paliza, bright rose; Minister Roell, very handsome flower, bright red; Melicette, pale mauve; and Nauticus. The May-flowering varieties were no less beautiful, and included such fine things as N. F. Barnes, a feathered variety on a fawn ground; Isabella, yellow flushed with rose; Inglescombe Pink, one of the best varieties; Didieri alba, a good white flower, although not over large in size, &c. (Silver Gilt Medal.)

Messrs. Hogg and Robertson, Ltd., 22, Mary Street, Dublin, staged over 100 varieties and species of Tulips, among which were seen most of the best varieties in the Cottage and Darwin sections, and some good specimens of the old florists' type. Zomerschoon is a Cottage Tulip of exquisite colouring, the ground shade being rose-red, with feathering of yellow. The yellow Gesneriana Mrs. Moon, is of richest yellow, and the flower is long with pointed segments. Europe, a Darwin variety, has a perfectly-formed cup, with petals of a dazzling rose-scarlet shade. Dawn is also of this class; it is a massive flower, rose-salmon in colour, shading to a lighter margin. (Large Silver Medal.)

Messrs. Barr & Sons, King Street, Covent Garden, London, staged an extensive collection. The flowers were not of large size, but they were refined and clear in colour. Prominent in the centre of the display were flowers of the old florists' type, bizarres, byblœmens, and selfs, some vases of the old Dr. Harvey being especially noteworthy. Among the larger Cottage and Darwin sections were Cyclops, Inglescombe Yellow, &c. (Silver Gilt Medal.)

Messrs. R. H. Bath, Ltd., Floral Farms, Wisbech, staged a good display, all of the Cottage and Darwin types, save a few of the showy Parrot varieties. They appeared to be later grown than those of the other exhibitors, and were in consequence fresher and brighter in appearance, while some of the vases contained flowers of remarkable vigour and substance. They had La Merveille in fine form, and the beautiful Mrs. Farncombe Saunders, a large well-formed flower of bright crimson-scarlet, Mad. Krelage, Beethoven, a grand flower of rosy-salmon shade, &c. (Gold Medal.)

Obituary.

W. L. Whale.—On the 21st inst., this gardener died suddenly as the result of an accident with his bicycle on the previous evening. A foot-passenger having ran against him, he was thrown on his head. He was principal foreman at Belvoir Castle Gardens, where he had lived five years, and was highly respected by everyone who knew him. Previously deceased was engaged at the Dell Gardens, Englefield Green; Byrkley Lodge Gardens, Burton-on-Trent, and other gardens. *W.H.D.*

ANSWERS TO CORRESPONDENTS.

Ants in Lawns: *F. L.* The casts can easily be levelled by rolling or by sweeping with a stiff besom. To destroy the ants pour a tablespoonful of bisulphide of carbon into holes made 6 inches deep and a foot apart, the holes to be filled with soil immediately after the fluid is poured in. You must remember that bisulphide of carbon is highly inflammable, so that no flame or spark must be allowed to come near it.

Asters: *Comet.* The roots appear to have damped off. See that the drainage is good, and do not afford water too frequently. Asters frequently suffer from attacks of wireworm, but the specimens received do not show indications of this pest, nor of eelworms. If the plants continue to fail, kindly send fresh specimens, and in the meantime we will examine those already received for signs of fungus.

Books: *A. W.* The best book of the kind we know is *The Book of the Farm*, by Henry Stephens, revised by James MacDonald. This 4th edition was published in six volumes by Messrs. William Blackwood & Sons, Edinburgh and London, in 1889. This book deals thoroughly with every important detail in connection with the management of a farm. A smaller book in one volume is *Elements of Agriculture*, by W. Fream, L.L.D., published by John Murray, Albemarle Street, London, in 1892, price two shillings and sixpence. In the event of your not being able to get the more expensive work, this latter book will be very helpful in the matters you mention.

Calceolaria mexicana: *F. G. B., S. W. F., and W. E. W.* This is an annual plant and a true species. You will find the name in the *Index Kewensis* and in the *Kew Hand List of Herbaceous Plants*. We believe that some of our correspondents have not got the correct species, and shall be glad, therefore, if they will send us specimens as soon as the plants flower, which they do generally in June and July.

Canker in Apple Trees: *G. A.* This injury is caused by a fungus, the growth of which is fostered by planting the trees in unsuitable soils and localities. Under the best cultivation, canker is not so prevalent as when less care is exercised. It is essential to select a good position when planting, one that is sheltered from the east winds if possible, for these are apt to cause the bark to crack; and if the natural drainage is not perfect, artificial drainage must be resorted to. Do not allow the roots to get down into a cold, unsuitable sub-soil, but encourage them by applying rich top-dressings to remain in the warmer layer of soil near to the surface which is under the good influences of air and sunshine. By such attention to the roots, and proper cultivation of the branches by summer pruning, &c., you will not need to prune the trees severely with the knife in winter, and this circumstance will be helpful in trying to keep down the scourge of canker. However, when all has been done that is possible, it will be found that certain varieties of Apples will remain liable to canker in certain districts, therefore, take pains to ascertain what varieties will thrive best in your own neighbourhood and give them preference.

Choicest Flowers: *B.* We cannot pretend to say (1) what are the choicest flowers, (2) where they are grown, (3) in private establishments, at Hampton Court, or in Kew Gardens, and (4) whether they are to be seen at the Temple Show? We think you need not concern yourself with questions numbered 2, 3, and 4, until you have settled to the satisfaction of yourself and others what is the correct answer to number 1. For ourselves we are quite unable to settle the first problem, but if we may give you, also *A.* and *B.*, a little advice, it would be to visit Kew and Hampton Court as often as possible, as there is much to be learnt at both places, particularly at Kew. Take the opportunity also to inspect a good private establishment as often as it presents itself, and under no circumstances neglect to come to the Temple Show, for at such an exhibition a gardener may learn much that it is impossible to study in his own garden. For some further remarks upon the cultivation of plants at Kew we refer you to *Gardeners' Chronicle*, February 24, 1906, p. 128.

Chrysanthemums: *Chrysanth.* (1) Syringe the plants with tobacco water, (2) or dip the points of the shoots into the liquid, (3) or, whilst the plants are small, place them in a low pit or house and vaporise them with the XL-All or the Campbell vaporiser.

Correction: On p. 313, in note on the recent eruption of Vesuvius, for *coal* read *cool* ashes.

Equivalent for Bothy Accommodation: *H., Cobham.* We are unable to lay down any fixed rule in respect to what should be considered a fair equivalent for bothy accommodation. As you have recently built a bothy, and intend that the young men shall henceforth live rent free in this building, it is doubtless a convenient time to consider the question of wages. But before you decide upon the exact amount you will deduct from the wages previously given these men, it would, in our opinion, be necessary to ascertain (1) whether under the new conditions the men will be required to work longer hours than formerly, (2) or to take night or Sunday "duty" from which formerly they were exempt, (3) what amount of money the men have been in the habit of paying for lodgings in the particular district? As we are unable to accept responsibility for settling these questions it may be pointed out that The British Gardeners' Association state in their "Recommendations" that journeymen should be paid "not less than 18s. per week with bothy, and 21s. without bothy, and foremen 24s. with bothy or 27s. without bothy." Such a recommendation which errs on the side of too great moderation shows that the association regards the equivalent for average bothy accommodation throughout the country as equal to three shillings per week.

Gardeners' Wages: *J. L.* If the circumstances be what you imagine them to be, the manager having exceeded his instructions would be open to blame, but we do not know that dishonesty could be proved.

Gloxinias: *H. D. S.* If you do not want the plants to flower so soon, you had better remove them to a slightly cooler atmosphere, and pinch out the flower buds as they appear. Even then the plants will not continue to produce buds for a great length of time, and it would have been better to be prepared with succession plants, either seedlings or old plants brought forward very gradually.

Moths in Carnation House: *G.W.R.* The moth you sent is a specimen of the "large yellow-underwing moth" (Triphæna pronuba). Like all other moths it lays eggs from which caterpillars are hatched, they when fully grown become chrysalides in the earth, from which in due course the moths emerge. The caterpillars are among those which are known as "surface caterpillars," as they generally feed near the surface of the ground, attacking the plants at the collar, or just below it. They usually feed at night, hiding during the day under stones, clods, or in cracks in the soil. Many of them may be trapped by laying pieces of slate, tiles, bricks, boards, turf, &c., about where these caterpillars are, as they will hide under such things when their nightly rambles are over. These traps should be examined every morning, or they may be caught at work at night by searching for them with a lantern. Fresh soot, or a mixture of three parts finely powdered lime, and one part fresh soot, scattered freely round the plants, and chopped in with a hoe is useful in keeping the caterpillars off.

Names of Plants: *D. C. C.* 1, a Nasturtium; 2, Sisymbrium officinale; 3, Arenaria trinervis; 4, Stellaria media; 5, Vicia cracca. Another time please send better specimens. We have no time to spare in unravelling such enigmas.—*J. W.* 1, Genista hispanica; 2, Prunus Padus.—*J. W. N.* Prunus Padus, the Bird Cherry.—*W. P.* 1, Brunfelsia (Franciscea eximia); 2, Davallia affinis.—*C. M. McDonald.* 1 and 2, Amelanchier canadensis; 3, probably A. vulgaris.—*L. Boell Phinder.*—1, Pyrus auricularis; 2, Cratægus sp. Send specimen when in flower.—*E. C. C. D.* Salvia Verbenaca.—*R. H.* 1, 2, 3, 4, 5, Send the Japanese Maples to some nurseryman who makes a speciality of them; 6, Cytisus (next week); 7, Coronilla Emerus; 8, Piptanthus nepalensis.—*M. L.* Both forms of Prunus Padus.—*J. A.* We cannot name the variety of Azalea for certain, perhaps one of the hybrids of Rhododendron indicum (Azalea obtusa).—*G. W.* 1, Pteris tremula; 2, Asplenium lucidum; 3. Cyrtomium falcatum.—*J. C., Dumbarton.* Dendrobium pulchellum, commonly called Dendrobium Dalhousieanum in gardens. It is a common species of no special value.—*J. C.* 1, Selenipedium longifolium (Cypripedium), a very free-growing, shady, warm greenhouse, or conservatory plant; 2, Passiflora racemosa.—*H. C., Kilkenny.* Lælia purpurata.—*A. M., Derry.* Probably Hypochœris radicata.—*W. H.* Lonicera Ledebouri.—*W. S.* 1, Lychnis dioica, double flowered form; 2, Spiræa hypericifolia.

Nectarines: *R. L.* The fruits are just approaching the "stoning" stage, and they will remain of the same size until the formation of the shell over the seed has been completed. If they are shrivelling much, this condition would indicate that the formation of the "stones" is not progressing normally. Do not excite the trees by applying much fire heat to the structure in which they are growing, but afford considerable ventilation when the condition of the weather renders this practicable. Examine the border to see if the soil is in a proper condition of moisture. If the fruits subsequently prove to have "stoned" badly this season, let some old lime or mortar rubble be forked into the soil during next autumn.

Protection of Fruit Blossoms by means of "Smudges" produced by the burning of oil: *R. B. R.* A note on this subject as applying to California was published in our last issue, p. 313, and further details will be given next week.

Rose Sawfly; *S. C.* We print your letter: "The first serious appearance of this maggot here was noticed about three years ago, when a bed of the red Rose, General Jacquiminot, was covered over with glass. The trees were old cut-backs, but they grew remarkably well, and formed fine long shoots, with every prospect of affording a good crop of Roses, but on the tip of each shoot where a flower bud was appearing a little black speck or two appeared. This black matter increased, the bud that was forming disappeared, and the top of the shoot began to shrivel up. On breaking the top off the shoot it was found to be hollow, and at the depth of from one to three inches was found a white maggot which had been feeding on the sap, so that there was only the outer casing of the shoot holding it up. Ninety per cent. of the shoots suffered in this way, so that the crop was a failure. In two other houses where the same variety of Rose was cultivated, but which is now planted with the varieties Liberty and Abel Chatenay, the plants are served in the same way. Other houses of Roses are scarcely touched. This maggot is hatched on the *outside* of the bud, or shoot, and is found to be exceedingly minute. Sometimes the insect starts down the stem where a leaf joins the stem; the result is just the same, it bores its way into the stem and hollows it out for two or three inches. We have every other form of Rose pest, but we can manage to keep these in check, but no fumigant, used ever so strong, seems to hurt this one, and hand-picking is out of the question, as the maggot is invisible to the naked eye, and has bored its way into the sap, or bud, before even it is suspected. What lays this maggot? Whatever it is, it does not appear until the end of April and in May, so the *first* growth escapes injury. Is the egg layer the jumper enclosed in tin box?" The shoots of your roses are attacked by one of the grubs of the "Sawflies" (Emphytus cinctus). Insecticides are of no use in dealing with this insect, unless they could be employed just when the sawflies are wishing to lay their eggs, when spraying the bushes with paraffin emulsion would be useful in keeping them off. We do not see why hand-picking should be out of the question. If you examine the shoots you will find that the part which the grub has bored is slightly thicker than the rest of the shoot, and is somewhat transparent; that the leaves above the injured part are begining to fade, and the shoots if pulled easily bend double at that part. A very little practice would soon enable you to detect the injured shoots, which should be cut off below the injury and burnt. We cannot suggest any other remedy. The "Jumper," more commonly called a "click, or skip-jack beetle," belongs to the family Elateridæ, and has nothing to do with the rose pest; it is the parent of one of the "wire-worms."

Royal Horticultural Society's Examination: *A. H.* Write to the secretary of the society, at the Royal Horticultural Hall, Vincent Square, Westminster.

Vines: *F. H.* The warts on your leaves are due to deficient ventilation and excess of heat or moisture, or both. Admit more air into the house and the trouble will probably cease.

Communications Received.—G.B.D.—R M F.M. M de V., Paris.—J.M.H., many thanks.—A. Cogniaux, Nivelles, with many thanks.—T.E.S.—J.V. & Sons.—W.M.W.—H.G.C.—A.C.H.—G.T.M., many thanks.—E.M.K.—de B.C.—B.D.J.—C.W.D.—E.S.G.—E.T.C.—A.C. Harris.—J. Garland—W. J. B.—O. G.—J. T. B. P.—J. J. D. J.—Dr. Dammer, Berlin—Herr Ernst Ladenburg, Frankfurt-a-M.—W. J. B.—W. Penrose Atkinson—W. G. S.—S. W. F.—J. C.—W. E. R.—G. M.—A. W.—W. H. D.—Jesse S.—Penrose Brothers—H. M. Veitch—W. A. Cook—Quintin Read—M., Kelso—T. R. P., Lilbourne—M. P.—J. G.—E. Horton—R. L. (the Nectarines have not arrived)—E. H. W.—E. H. J.—Roy. Hort. Soc.—H. W.—F. W. C.—S. S.—W. H. D.—R. T. Hesketh—C. S. & Co., Ltd.—H. H. Smith.

For Market Reports see page x.

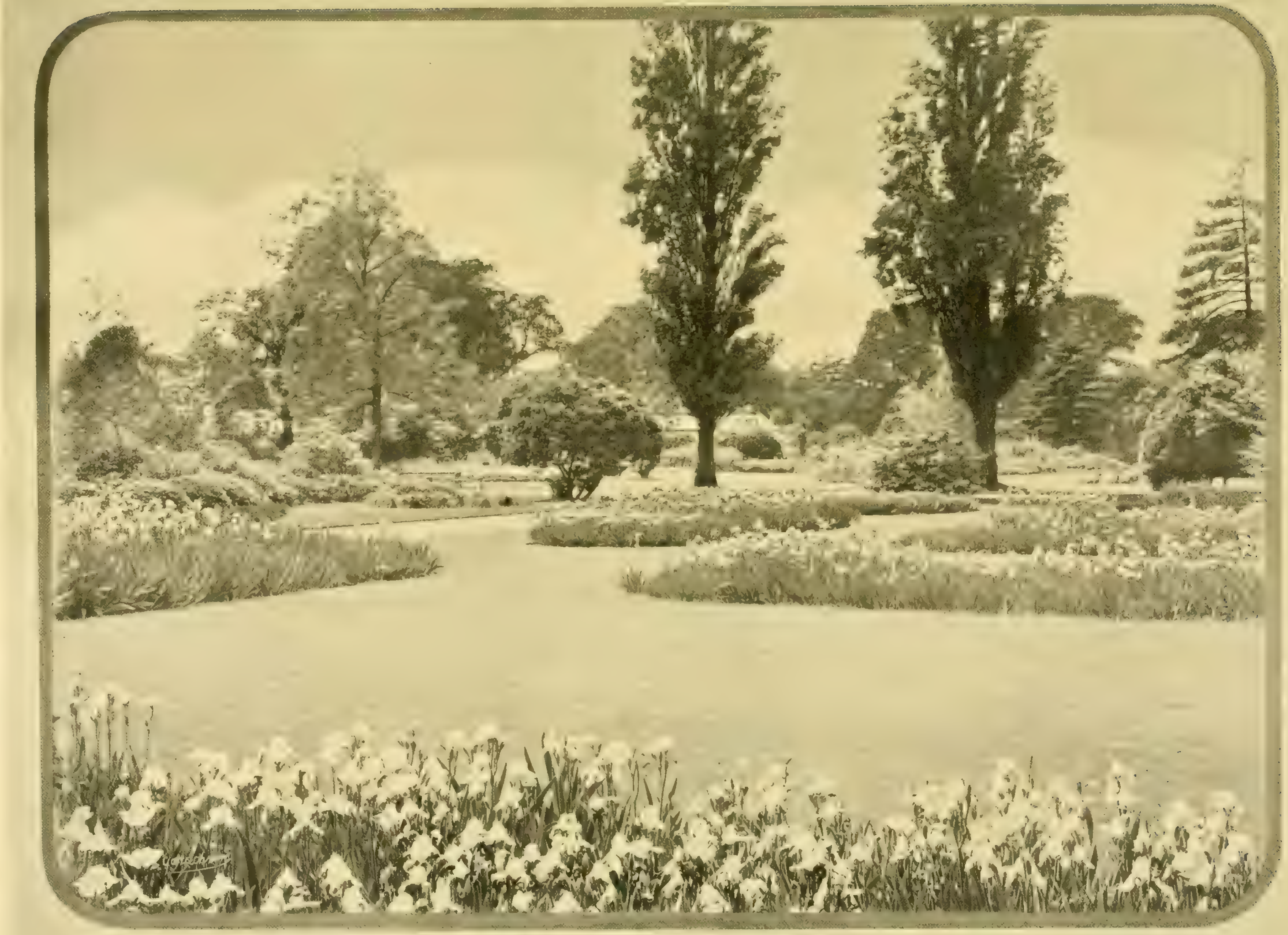


Photo by E. J. Wallis.

The Iris Garden in the Royal Gardens, Kew.

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THE
Gardeners' Chronicle

No. 1,011.—SATURDAY, June 2, 1906.

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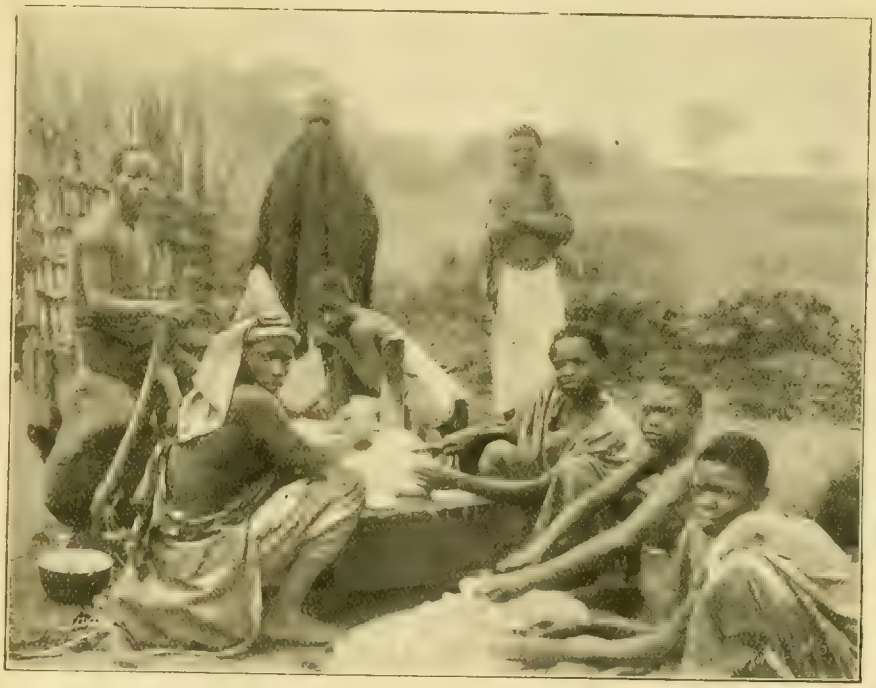
CULTIVATION OF AFRICAN RUBBER.

WELL within the memory of many still living, almost the only use made of "India-rubber" was for the purpose of erasing pencil-marks. At that time small pieces were sold at a relatively high price by stationers. Since then, the uses to which this substance is put have enormously increased. The demand has become proportionately great, although many thousands of tons are now imported annually. Everything points to a still greater demand, and botanists, merchants, and manufacturers are exerting themselves to the utmost to extend and develop the sources of supply. The precious juice, the "latex" of the botanists, is found in all milky-juiced plants, and these are of very varied affinity. Not all, however, are capable of being turned to practical account, so that here the botanist has an opportunity of showing that his researches and observations may, and do, have a direct practical value, just as was the case with cotton, tea, cinchona, and other products.

The india-rubber of commerce is yielded by species of Hevea, Manihot (Euphorbiaceæ), Castilloa, and Ficus (Artocarpaceæ), all of which are trees of arborescent habit, whilst other supplies are obtained from the stems or rootstocks of various climbing plants belonging mostly to the Apocynaceæ. Gutta Percha and Balata, nearly allied but chemically different products, are derived from certain trees of the order Sapotaceæ.

In some cases the supplies are obtained by tapping the trees in the forests and collecting the juice, or by pounding and grinding the rootstocks of the creepers. So great is the demand that the necessity of some system of forest-conservancy has become imperatively necessary, and, in addition to this, our tropical colonies are vieing with each other in the collection and cultivation of the precious rubber-producing trees. In this matter Kew has rendered service, and the Colonial Botanic Gardens within the tropics have taken up the matter with zeal and energy.

It is not long since we had occasion to notice the elaborate work of Messrs. De Wildeman and Louis Gentil, of Brussels, on the *Lianes Caoutchoutifères* of the Congo State. That book contains a full account of the climbing plants or *lianes* bearing Caoutchouc, in the Congo territory, mostly species of Landolphia, Carpodinus, and Clitandra—all Apocynaceous genera. The plants are not only described and figured, but full details as to the most suitable methods of cultivation and propagation of the plants are given, together with information concerning the collection and preparation of the rubber. How requisite it is that the cultivator should take counsel with the botanist is shown by the large number of species of the same general appearance as the useful ones, but whose juice is, for various reasons, useless. The discriminating powers of the botanist are here called into play in enabling the collector or the cultivator to distinguish between those that are useful and those that are valueless. One section of the work of Messrs. De Wildeman and Gentil is devoted to this important subject.



[*Photo by M. T. Dawe.*

FIG. 133.—AFRICAN NATIVES CUTTING UP SPONTANEOUSLY COAGULATED RUBBER PRODUCED BY LANDOLPHIA DAWEI.

Our own African territories abutting on the Victoria Nyanza on one side and the Congolese State on the other are also rich in rubber-producing trees and "vines." The Lagos silk-rubber tree Funtumia elastica (Apocynaceæ) has been discovered wild in the forests of Uganda. So important a discovery led to the appointment of Mr. M. T. Dawe to undertake a botanical mission to the forest districts of Buddu and the Western and Nile provinces of the Uganda Protectorate from Buddu to Gondokoro. This was accomplished in 1905, and the results are published in a Blue Book on the Economic Resources of Uganda, presented to both Houses of Parliament in April of this year, and to be had from Wyman and Sons, Fetter Lane, or from any bookseller. On his return to England, Mr. Dawe spent some time in arranging his collections, and acknowledges the assistance he has received in the determination of his plants from members of the Herbarium staff at Kew. Details are given in the report before us of the vegetation of the districts he passed through and the various timber trees and other useful plants met with by the explorer. Here, again, it is curious to note the existence of many useless species in the same country with those that are serviceable. Amongst these latter is a new species, called by Dr. Stapf, Landolphia Dawei, which affords a first-class rubber. Of this species, M. Chevalier, as quoted in the *India-Rubber Journal*, says that it is of all rubber-creepers at present known that which grows the most rapidly, gives the greatest quantity of rubber, and yields latex which is the most easy to coagulate into elastic rubber of the first quality. Doubtless, in the Straits Settlements, where the rainfall is practically continuous, this plant would succeed. This species has also been found cultivated in the Island of San Thomé in Portuguese West Africa, whither it may have been introduced. A valuable timber tree, Podocarpus milanjanus var. arborescens, was also found, together with a tree producing a fragrant wood like Sandal wood. This has been named by Sprague, Dawea ugandensis, and forms a new genus of Bixaceæ.

We must refer the reader for the details of Mr. Dawe's wanderings and an account of the plants he met with to the Blue Book before mentioned, as they are too numerous to be more than mentioned here.

The Ruwenzori mountains, the vegetation of which had been previously made known to us by Mr. Scott Elliot, afford, owing to their great height, a very interesting flora. At 9,000 feet, the flora has many British representatives. Here a new Cyrtanthus, C. cyrtanthiflorus of Wright, was discovered, and it is now in cultivation at Kew. Arborescent heaths suggest a former connection with the Cape, as they are not now found in the intervening country. Handsome Lobelias occur from 12,000 feet to the level of the glaciers, together with tree Senecios and Helichrysums.

The greater part of the district of Unyoro is, we are told, admirably suited for the cultivation of Cotton.

The author narrates his adventures with wild elephants, his attack of malarial fever, his dealings with the natives, some of whom have cannibal propensities, and affords such a mass of interesting and useful information that we can but hope that it will be published in a more convenient form than a Blue Book offers. Such a treasury of information should not be hidden in such a publication. Three plates illustrate various species of Landolphia and Funtumia, together with a map of the route followed by the author.

A complete list of the plants collected is given in an appendix. We could have wished that a list of the rubber-producing and other economic plants had been given separately. It is obvious that there are an unusual number of them, and some are probably of great importance, but it is not altogether easy to pick them out from the "solid" pages of a Blue Book.

The illustration, for which we are indebted to Mr. Dawe, shows a native in the act of cutting up a lump of rubber that had coagulated spontaneously after being left one night in a pot. This was taken by Mr. Dawe on the same day that he discovered the Landolphia Dawei in Uganda.

VARIATION IN ODONTOGLOSSUM CRISPUM.

I have long been considering the sectional distinctions of the enormous number of named varieties of this species. Every year they become more linked up by the appearance of new forms of this complex plant, for since the gigantic importations of recent years from newer districts, the variation in the spotting is seen to be more marked and in itself more varied than it was in the 'eighties and early 'nineties. This has resulted from spotted forms coming from the district where O. Hunnewellianum and O. triumphans represent the brown and yellow species that are the equivalents of O. luteopurpureum and of O. gloriosum in the "Pacho" districts.

Primarily, the districts themselves from which the plants come are widely separated and can be sectionised, for Fusagasuga, La Vega, Pacho, San Cayetano, Chiquinquira, and Velez are all far enough apart to constitute ample difference in the general type of the crispums from each place, resulting from natural circumstances. I take these names as indicating the districts, but, of course, the area is much larger than is ordinarily implied by the name of the town more or less its centre.

It is easier to commence by clearing away the negatives first, and so Pacho may at once be written off as a crispum-producing area to-day; but it has two extended ends: to its S.W., La Vega, which sends its supplies to Facatativa, and to its N.E., San Cayetano. From both these districts come fine forms of crispum, agreeing in all respects with the grand, heavy flowers known in the 'seventies and early 'eighties as "O'Reilly's" and St. Albans varieties, which produced such fine round flowers as "The Duchess," for which Sir Trevor Lawrence paid on Nov. 16, 1882, 40 gs. for "half the plant"; apiatum, whose history is already well known; Ballantinei, Hrybyanum (by the way, where is this fine thing now?), Sanderianum, Thompsonianum, Veitchianum, and Baroness Schröder. The crispums emanating from this district that have too large a proportion of luteo-purpureum influence in them to permit them to be called true crispums are Alpha, Cooksonianum, Evelina, nobilius, pardalinum, Princess Christian, Schröderianum, Stevensi, The Earl, Wolstenholmiæ.

La Vega has carried on the high character of Pacho, and produced such fine forms as Cooksoniæ, Franz Masereel, Pittianum, and Seraphim.

San Cayetano has done its share also in furnishing Abner Hassall, de Barri, Persimmon and Donovan.

When we get to Chiquinquira the type of crispum pure and simple becomes quite changed; the numerous spotted varieties are not of such grand form and size as those above mentioned, but occasionally among them comes a really fine massive bloom. This is very difficult to account for on natural lines, but there are many ways that suggest themselves to an expert in these matters. In this district the innumerable forms of Adrianæ appear, and, of course, the continual intercrossing by the agency of insects has produced such an interminable chain of links that it has become difficult to say what is crispum and what is Adrianæ, for each has many points in common with the other. Scores of "yellow crispums" appear in these importations, but the yellow disappears in a few days, leaving a dirty white, sometimes called "creamy," sometimes not even the dirty white. There can be no doubt that a crispum having yellow in it, even though fugitive, cannot be a crispum pure and simple. It is impossible for a crispum to possess the attributes of the various species growing with it and be a true crispum at the same time. This statement has a direct bearing upon many varieties called crispum, but which are no doubt crosses between a crispum and an Adrianæ.

It is hardly worth while wasting time in discussing the crispums from Velez; it will suffice to say they are small and worthless. No one who has any regard for his reputation or the satisfaction of his clients ever sends them out of the district.

The five brown and yellow species are grouped differently in the various districts. I, therefore, give a comparative synopsis, arranging them in the order of their preponderance:—Fusagasuga; Lindleyanum gloriosum luteo-purpureum; Pacho, gloriosum, Lindleyanum luteo-purpureum; Chiquinquira, Hunnewellianum triumphans, Lindleyanum gloriosum luteo-purpureum. It is manifestly impossible to say these are exactly relative quantities, but they are roughly correct, it being also inferentially proved by the hybrids resulting from the importations.

There is one other factor in Nature's creation of blotched crispums which may have played a very important part; that is the variety roseum. The prevalence of roseum is greatest at San Cayetano, becomes less at Fusagasuga, Pacho, La Vega, Chiquinquira, and least at Velez.

In "Pacho" and "Fusagasuga" days we had only crispums which at times showed characters of luteo-purpureum or gloriosum or Lindleyanum. Alpha, Stevensi, Cooksonianum, leopardinum have evidence of luteo-purpureum; the last has so much in it that it is an admitted Wilckeanum, and Stevensi will ere long be so called, and I doubt not that the hybridist will prove several others to be in the same category.

When Chiquinquira was drawn upon, the innumerable varieties began to appear, and that complex thing, a spotted crispum, spread out in all directions towards the five brown and yellow species that grow among it in this large district. Adrianæ caught us napping, or, rather, not awake, and when "loochristiense" came we did not quite understand it, though we did not all consider it an "excellens." Thenceforward scores of spotted forms kept cropping up, ranging over a wide area of variation and arrangement of markings. It is quite easy in the clearest of these to recognise their descent by the differences of coloration, the shape and position of the spots.

In this group there are great numbers of so-called crispums that I have not a shadow of a doubt are crosses between crispum and Adrianæ; they will ultimately be relegated to O. Fascinator, which has been raised artificially. They comprise Ami Charles, Kegeljani, tesselatum, Whateleyæ, Confetti, Duke of York, Prebendary Bevan, The Kaiser, besides many named forms in collections.

It will be seen that in the above "crispums" of each section I have mostly named those certified by the Royal Horticultural Society, as they are more widely known, and also because they have had their portraits painted for that Society's collection, and are therefore easy of reference; but there are many more that could be added, though the above suffice, and their origin as to district is in most cases indisputably known to the writer.

At the present time the evidence shown by the garden-hybrids has not thrown very much light upon the imported plants, but as more results bloom, the facts will become clearer, and in most cases there will be but little doubt left.

O. Fascinator (crispum × Adrianæ) raised by Mr. Charlesworth, and O. Stewartianum (Andersonianum × crispum heliotropium) raised by Mr. Stewart, have already proved the Adrianæs and Andersonianums that looked much like crispums to be crosses between the hybrid and the parent species, and many others will follow to add further proof hereon, as well as in analogous cases.

It has already become very difficult to lay down a hard-and-fast rule, and when experts disagree, who can decide whether a plant is a crispum or an Adrianæ or a crispumish Adrianæ, otherwise now a Fascinator.

I have known a discussion arise as to the status of a plant when experts disagreed as to whether it was a garden hybrid or an imported plant, and also whether it was a crispum or a hybrid. I have long since placed many varieties in this section; now we have absolute proof of it. The same remarks apply to Andersonianum and Coradinei, among which despised hybrids there are a few that are fine ones; these, no doubt, are the result of blotched crispums crossed with the original hybrid.

The following varieties of Andersonianum may be separated as "Stewartianums":—Bogaerdianum, Crawshayanum, obstupefaciens, Pollettianum, Youngianum.

The varieties of Coradinei that come under this rule are:—Crawshayanum, mirabile, Mrs. de B. Crawshay, and Theodora. I mention this last variety in my own collection, though it has not yet been shown, but those who have seen it pronounce it indisputably a cross between a blotched crispum and O. Coradinei, and as it bears distinct evidence, I quote it in support of my argument.

Reviewing the matter quite dispassionately, I do not think that things are as clear as they would be if all would do their best to clear the air of many doubts, to use no stronger word. *de B. Crawshay.*

ODONTOGLOSSUM CRISPUM G. W. LAW-SCHOFIELD.

A flower of this handsome variety and a photograph of natural size (see fig. 134) has been sent by G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester (gr. Mr. Shill). It is certainly one of the finest forms of this favourite class. All the segments are broad, the sepals and petals being nearly equal. The sepals are white, slightly tinged with purple and bearing several large purplish-red blotches. The petals are white, fringed, with one large, irregular purplish-red blotch equal to half the area, and two or three smaller ones nearer the white base, which also has a few short purple lines near the column. The crimpled lip is of a chestnut-brown colour, with yellow crest and white fringed margin, whilst the column is coloured purple on the upper side. The reverse of the flower shows the purplish blotching almost as bright as on the face. *J. O. B.*

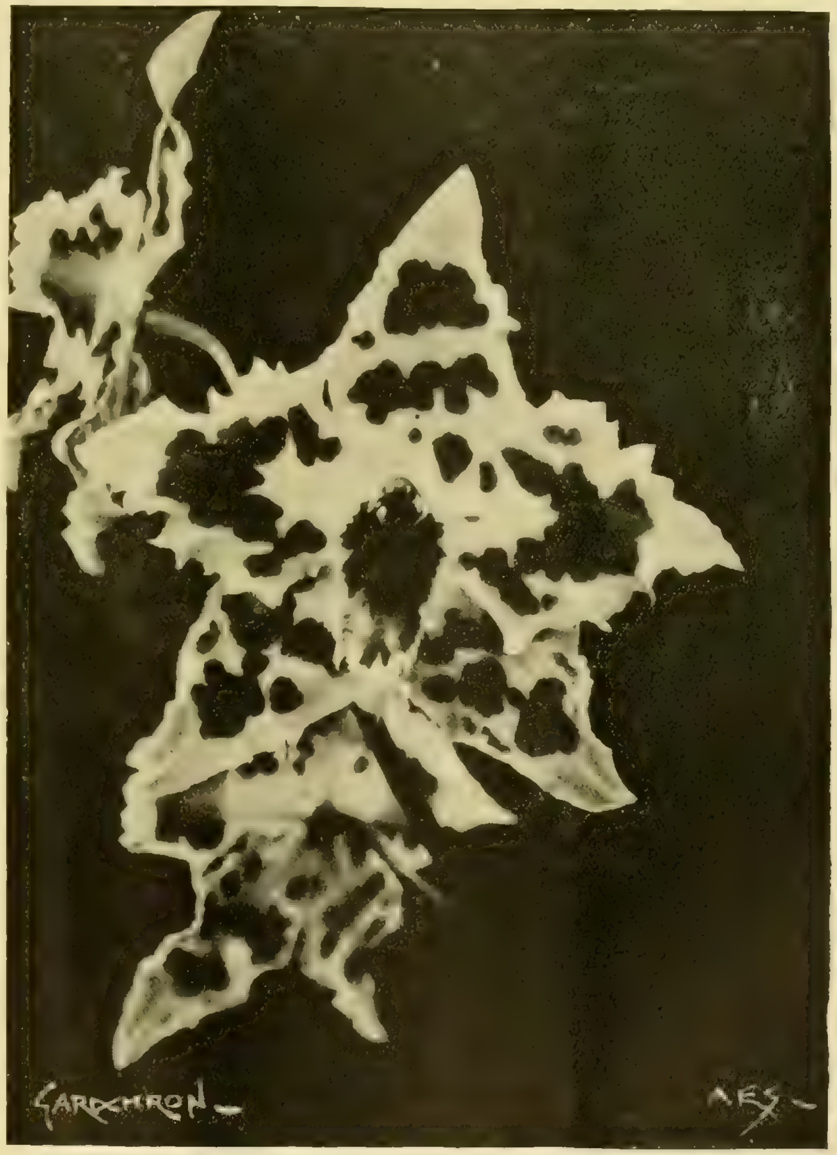


Fig. 134.—ODONTOGLOSSUM CRISPUM G. W. LAW-SCHOFIELD; FLOWERS. WHITE WITH PURPLISH-RED BLOTCHES.

KILLERTON REVISITED.

In the *Gardeners' Chronicle* for November 28 and December 5, 1903, pp. 365 and 386 respectively, I described some of the attractions of Killerton, the Devonshire seat of Sir T. D. Acland, Bart My visit was then made in August, and, judging by what one then saw, it was clear that the place would be a paradise of spring flowers at the present season of the year, more especially as Mr. Coutts, the head gardener, had then on hand the transformation of an old stone quarry into a rock garden, and the two and a half years or more that have elapsed have produced a splendid result. As I stated in 1903, the site for a rockery was most appropriate, not only from the rocky nature of the ground itself, which is a characteristic of many localities in Devonshire, where the stones may be seen protruding, so to speak, through the grass, in masses of various sizes, but also from the nature of the surroundings. The base of the rockery is on a gentle slope, from which it rises rather abruptly to a considerable height—roughly, to 40 or 50 feet, forming a kind of amphitheatre, with winding paths unseen from below; but which form a means for the more close examination of the plants, with which, at the present time, it is fairly well clothed, though there is plenty of reserved space for further additions. From below, these spaces are scarcely apparent. The appearance of the masses of colour formed by such plants as Lithospermum prostratum, the brilliant blue of which is only equalled by some of the Gentians, is noteworthy. Even in the Gentians it is not produced so abundantly, though in the lower part of the rockery there were fine masses of Gentiana verna and G. acaulis, two of the most beautiful species for rockwork. Another mass of blue, high up, and very attractive, was formed by Mertensia lanceolata, a lovely plant, a native of the Rocky Mountains, sometimes described as M. alpina. Further on a mass of bright yellow attracts attention, which, upon closer examination, we find is produced by Alyssum montanum. The eye is next attracted to a fine clump of glowing red colour, produced by a double-flowered Rock Rose (Helianthemum). Amongst other plants equally attractive, though perhaps not so imposing at a distance, may be mentioned Omphalodes verna, with its blue flowers, very like those of a Forget-me-not, Crinodendron Hookeri, a Chilian plant belonging to the Tiliaceæ, bearing numerous rose-coloured flowers, Daphne cneorum, with its profusion of rosy-lilac flowers, and its ally, the well-known Daphne Blagayana, the dwarf, shrubby habit of which makes it very suitable for a rockwork on a large scale. The Aubrietias, Olearias, Cinerarias, Antirrhinums, and varieties of Phlox assisted to complete a charming picture and an interesting collection of plants, nor must we forget the beautiful little Veronica repens, forming, as it does, a dense carpet covered with its pale-blue flowers. A fine three-year-old plant of Erica australis was also in flower, as well as Rosa sericea, Rubus deliciosus, Cytisus incarnatus, and Primula denticulata, which, we understood, had been in flower all the winter. In a contiguous part of the garden, where the plants are allowed to assume much of their natural wildness, were planted bushes, some 6 or more feet high, of Fuchsia Riccartoni, Rhododendrons, Azaleas, and such-like flowering plants. One fine bush of Rhododendron campanulatum was so completely enveloped in flowers that no other portion of the plant was visible.

Another interesting series of plants at Killerton are those of a climbing habit planted against the south front of the house, many of which are interesting, as showing their power of endurance in the Devonshire climate throughout the winter. Of these we may mention Lonicera etrusca, the sweet-scented flowers of which are purplish on the outside and yellow on the inside. Here also flourishes Pentstemon heterophyllus, Carpenteria californica, Vitis Thunbergii, with its peculiar heart-shaped leaves which have a fine colouration in autumn. Jasminum primulinum, with its brilliant, double, yellow flowers, Azara microphylla, Ipomæa rubro-cœrulea, Mutisia decurrens, which has been 3½ years in its present position, and bore 30 flowers last year, and promises to produce 100 blossoms this year. Abelia floribunda also grows here, as well as A. triflora, which is a remarkably fine and well-grown plant. Veronica Hulkeana, which though described as a half hardy plant, has stood in its present position for the past three years; Bridgesia spicata, a remarkable, evergreen wall plant, clinging tenaciously by its curious suckers in the axils of the leaves; Habrothamnus corallina was represented by a fine plant in full flower; and Buddleia Colvillei was about 15 feet high. Here was also Sollya heterophylla, usually classed as a greenhouse climber, but planted here as an experiment. Solanum crispum, with its bluish-purple or lavender-coloured flowers, was very prominent, growing to a considerable height The very handsome South African leguminous plant, Sutherlandia frutescens, was planted here in the hope that it would stand the mild Devonshire winters. The well-known handsome climbing Bignoniaceous plant, Eccremocarpus scaber, flowers freely for a good part of the year. Of other plants that do well at Killerton, and of which fine specimens exist, may be mentioned

Clianthus puniceus, represented by a very old plant, with thick woody stems, growing freely over an archway in a wall, and at the time of my visit it was covered with its peculiar deep-red flowers. Near this, in a somewhat sheltered corner, was a well-grown bush of Ribes speciosum, the bright green, shining leaves of which were well set off by an abundant crop of its coral-like pendent flowers. Lathyrus pubescens, with its numerous pale-blue, Wistaria-like flowers, was well represented both under glass and in the open, showing its adaptability for either treatment. Mr. Coutts has a strong belief in the hardiness of many plants in some localities where they have hitherto been considered too tender to be left out of doors during the winter, and he is to be commended for his attempt to prove this. *John R. Jackson, May 21.*

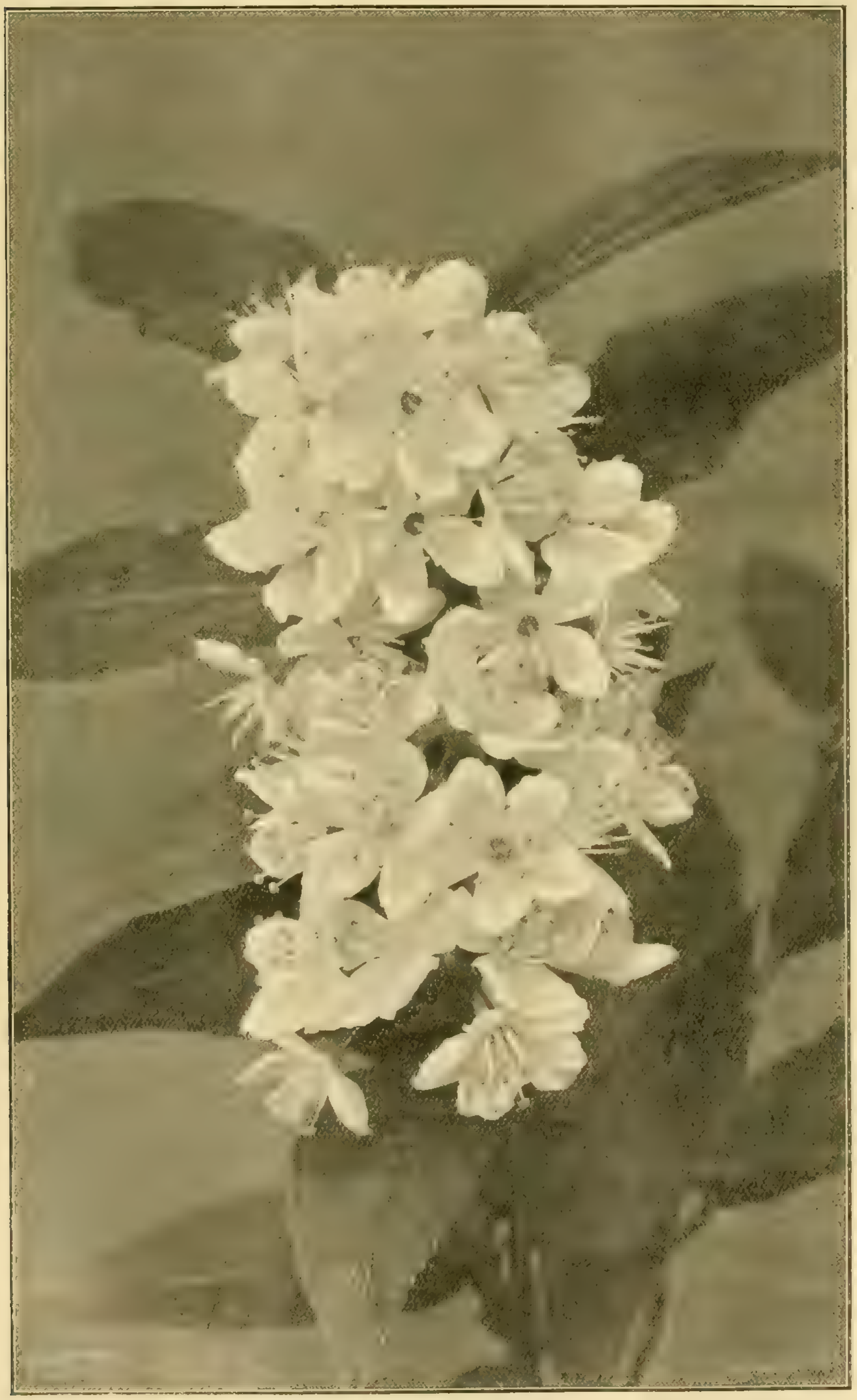


Fig. 135.—DEUTZIA CRENATA VAR. WATERERI; FLOWERS WHITE, TINGED WITH ROSE-PURPLE ON THE OUTSIDE OF THE PETALS.

DEUTZIA CRENATA.

Beautiful as the Deutzias undoubtedly are, they are still amongst the most disappointing of hardy flowering shrubs. This is because the flowers are nearly always injured by late frosts. The majority of the species are easily induced into active growth by mild weather such as we often get in early spring, in consequence of which the flower buds fall an easy prey to the unseasonable frosts of late April and early May. Deutzia crenata is, however, an exception. Of all the species it is the most reliable, although it even does not always escape.

It was the first of the Deutzias to be introduced, having been imported from Japan about eighty years ago. Ever since that time it has been the most popular of the Deutzias, but, curiously enough, it is more frequently met with under the name of "scabra" than under its proper name. The mistake appears to have been first made in the *Botanical Register*, in which, at t. 1,718, it is figured as D. scabra. Fortunately, the true D. scabra (a very different plant) has in recent years been distributed from the Darmstadt Botanic Garden. It has been in cultivation at Kew for several years past, Mons. Maurice de Vilmorin grows it at Les Barres, and it was recently shown before the Royal Horticultural Society at Westminster by Messrs. Paul and Son.

Deutzia crenata is a bush growing 6 to 8 feet high, forming a dense thicket of erect stems. The leaves, of ovate-lanceolate shape and 3 to 4 inches long, are of a deep, opaque green, finely toothed, and of a curiously rough, harsh texture. The flowers appear in an erect raceme 4 or 5 inches long, and in a good year are borne in such profusion as to render this species one of the most beautiful of June-flowering shrubs. As regards the individual flowers, the species is variable. There are both single and double-flowered forms, and of the single forms, that known as Watereri and shown in Fig. 135 is perhaps the best. The blossom is large, with petals white inside but flushed with rosy lilac on the outside. The double-flower forms—florepleno, Wellsi, Pride of Rochester, etc.—are either pure white or are tinged with rosy purple outside the petals. All of them are beautiful. The varieties with variegated leaves—punctata and "foliis variegatis"—are not of much account; there are, at any rate, better variegated shrubs to be had.

These Deutzias like a good loamy soil and an occasional mulching with rotted manure. They should also be overhauled about every other year with the pruning knife in order to thin out the older stems, which are apt to become crowded and worn out. *W. J. B.*

DENDROMECON RIGIDUM.

Tree-poppies are scarce, and indeed the name is hardly appropriate, for like the Romneya Coulteri the plant is more shrubby than arborescent. In any case it is a very attractive plant, as may be judged from our illustration, fig. 136, taken from a specimen exhibited lately at the Royal Horticultural Society by Messrs. Ware. The foliage is of a greyish-green colour, the petals brilliant yellow. The plant is a native of California, and is thus described in the *Flora of California*, i., p. 23 :—

> "D. RIGIDUM, Bentham. A shrub 2 to 8 feet high, with many slender branches and whitish bark; leaves ovate to linear; lanceolate, 1 to 3 inches long, very acute or mucronate, sessile or nearly so, twisted upon the base so as to become vertical, reticulately veined, the margin rough or denticulate; flowers bright yellow, 1 to 3 inches in diameter, on pedicels 1 to 4 inches long; capsules curved, attenuate above into the short stout style, 1½ to 2½ inches long; seeds large, 1½ lines long. Dry, rocky hills of the Coast Ranges from San Diego to Clear Lake, most abundant south of Point Conception, Santa Rosa Island, Harford. Very variable in its foliage and in the size of the flowers, but all the forms seem referable to a single species."—*Trans. Hort. Soc., 2 Ser., I. 407.*

LEAVES FROM MY CHINESE NOTE-BOOK.

A JOURNEY IN EASTERN TIBET.

(Continued from page 332.)

June 14th.—We spent the day resting and investigating this tiny out-of-the-world place of Hokeou. The hamlet is walled in by steep desolate-looking cliffs, with prayer-flags fluttering from seemingly inaccessible points. Maize is cultivated, and Wheat and Barley were in ear, strong proofs of an exceptional climate. The Yalung Valley is similar to other river valleys of these regions in that it enjoys a remarkably warm climate for its altitude, and supports a xerophytic flora. The flora hereabouts is similar to that of the Tung Valley described in *Gardeners' Chronicle*, January 27, 1906, p. 60, but no Opuntia occurs here. I gathered two interesting Roses—R. Webbiana and R. Soulieana—but nothing else. R. Soulieana is a large straggling shrub, with the flowers opening yellowish and changing to creamy-white. It is a distinct-looking Rose, but not very ornamental.

The transport of brick-Tea across the river appears to be the sole occupation of the male population of this miserable place. The local petty official informed us that some 20,000 packages annually pass through here. The better-class Tea, and that destined beyond Litang, is all sewn up in raw hides. Most of the Tea is ferried over in small skin coracles, for all the world like those used by the ancient Britons at the time of the Roman conquest! The boatmen were busy all day taking over this brick-Tea, and at night fully 200 yak were quartered on the opposite foreshore in readiness to take away the Tea. The ordinary load of Tea for a yak is six packages—three on either side, but occasionally nine packages are carried by one yak.

June 15.—Hokeou is roughly 100 miles west of Tatien-lu, and was our intended destination. However, my curiosity to see what the country on the other side of the river was like would not be denied, so we arranged an excursion in order to satisfy it. Leaving our inn at 7 o'clock, we were ferried across the river in one of the large flat-bottomed boats. The passage proved quite exciting; our boat turned round in the rapids and careened in an alarming fashion, shipping a couple of heavy waves. The ten men who manned the ferry worked for all they were worth, and we reached the opposite shore with nothing worse than a drenching.

We made a steep descent to the chieftain's house, where we found horses awaiting us. The road descended to the bed of a torrent, which we crossed. Bushes of Rosa Soulieana and Berchemia flavescens were common. About a mile from the chieftain's house the torrent branches, and we ascended the branch to the left. The valley quickly narrowed into a wild ravine, perhaps a hundred yards broad, with nearly vertical precipices clothed with forest.

The flora was rich and very interesting. Abies Fargesii, Picea sp., Pinus sp., and the ever-green prickly Oak formed the bulk of the forest. Willows, Cornus macrophylla, Populus tremula, P. balsamifera, and two species of Maple are very abundant in the bed of the ravine. A large-growing species of Euonymus and a species of Ash were common. Rosa sericea and a species of Philadelphus—masses of white—enlivened the path. Lonicera spp., Zanthoxylum sp., and a Clematis were other plants of interest. On Populus tremula I gathered a species of Mistletoe.

Primula septemloba was fairly abundant on most shady rocks, and growing with it I found the lovely Isopyrum vaginatum, heretofore only known from distant Sikkim. Amongst some loose rocks I noted a curious species of Rhubarb with finely dissected leaves; unfortunately, it was only in bud. The most interesting plant of all, however, was a species of Rodgersia with perfectly pinnate leaves. At first I took it for a curious species of Polygonatum, but on finding some plants in bud its identity became evident. I brought away some roots and succeeded in getting them to England safely (see Rodgersia sambucifolia in *Gardeners' Chronicle*, February 24, 1906, p. 115). Another remarkable plant collected was Clematis Soulei. This is a lovely species with white flowers larger than those of C. montana, and with foliage like that of C. Flammula. Unfortunately, I was unable to secure seed of this Clematis; thus it, like many other good things, remains for the next collector who visits these wilds.

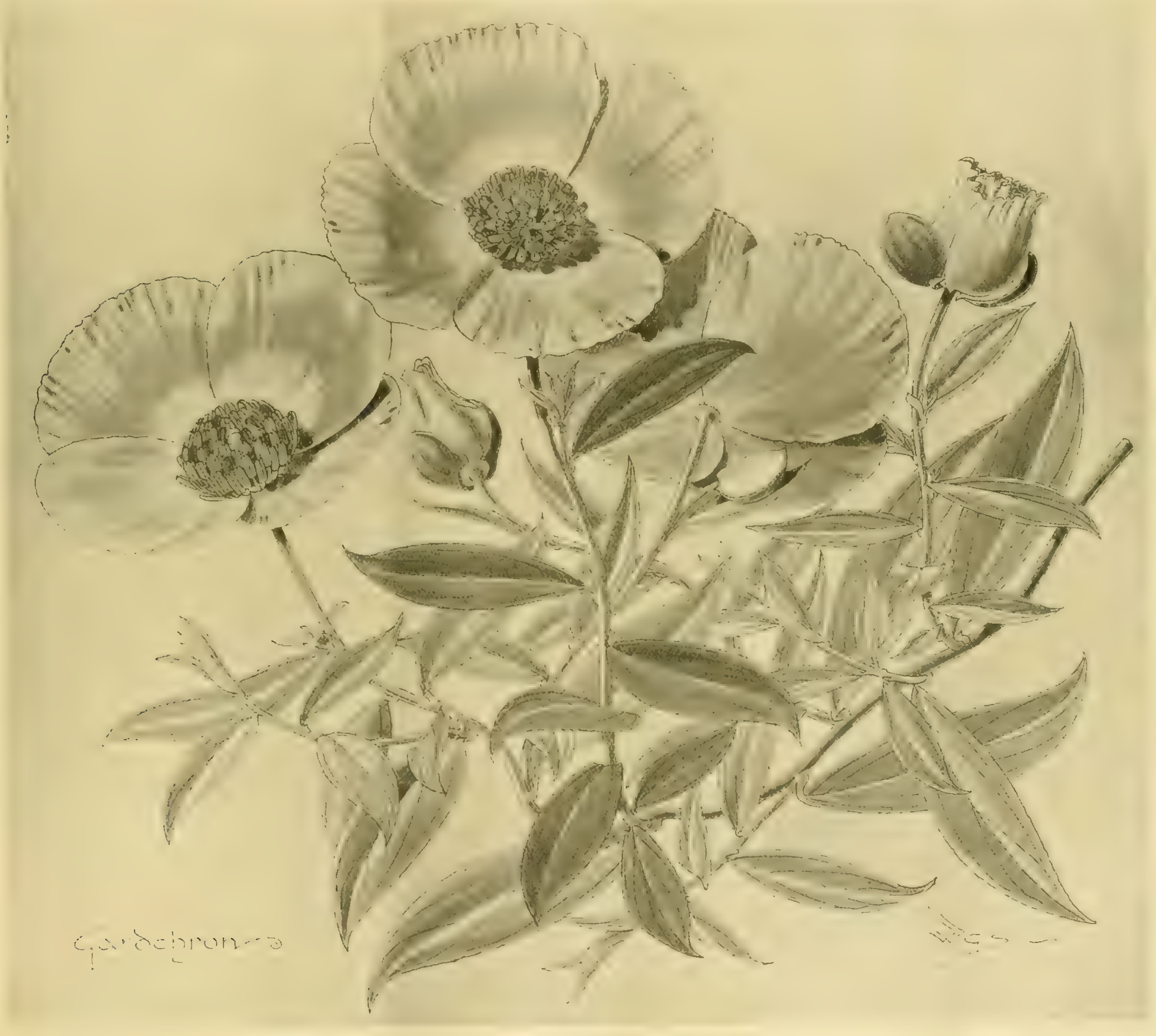


Fig. 136.—Dendromecon rigidum: flowers primrose yellow, fragrant. (For text see page [illegible].)

The forest flora generally resembles that of the forest above Hokeou and below Orme-che, but this ravine enjoys a more humid climate, and consequently the vegetation is more luxuriant. The Conifers, Maples, and Poplars are of huge size, and the woodman's axe is seldom heard in these forest-depths. Landslips are of frequent occurrence, and the bed of the ravine is strewn with débris. Huge trees lay rotting in every direction. In the branches of the trees we noted flocks of the small green parrot the Chinese are so fond of. Small grey squirrels were very common, and among the rocks a slate-coloured marmot occurs. We also saw a few monkeys. These were of medium size, grey or light brown in colour. Having journeyed as far into the depth of the forest as our time admitted, we stopped, lit a fire, and had our lunch. Whilst engaged in this occupation a heavy thunderstorm broke, and though we crouched beneath the shelter of large trees, we were speedily wet through. Hailstones of great size fell, branches were twisted off the trees and things looked dangerous. The torrent increased in volume with astonishing rapidity, and we began to think we should have much difficulty in retracing our journey. Luckily the storm did not last long, and nothing more serious than a wetting happened to us.

We were very loth to turn our back on this interesting and botanically-unknown region, but prudence compelled us to hasten homewards.

On our return journey to Hokeou we had the misfortune to encounter some 200 yak laden with tea. The path was very narrow, and we had to climb up the rocks out of the way. A yak laden with tea is an awkward and ugly beast to meet in a narrow path. On sighting us they stood stock still and looked at us for some minutes, then made a mad rush, carrying everything before them. One unfortunate beast collided with a rock and rolled over, completely blocking the path. Others coming up tried to pass, and gored the fallen brute; one got rid of its load, which rolled down into the bed of the stream, and galloped over the fallen beast. Others followed, and trampled the fallen yak well-nigh into jelly. Whilst all this was going on I was standing on some rocks a few feet above the road, expecting every minute that the horse and myself would be knocked down in the mad rush of the frightened yak. Eventually some Tibetans came up and succeeded in calming the timid beasts, much to our relief. We reached the Yalung safely at dusk, and having delighted the Tibetan chief and his household with a few trifling presents for the use of the horses, crossed the river to our inn.

The unsophisticated Tibetan is undoubtedly a very decent felow. Unfortunately, he is very suspicious, timid, and avoids intercourse with foreigners.

We could not secure transport for our return journey, the animals we had on our outward journey being too exhausted. There being nothing else for it, the military official commandeered oola for us from the local chief. Our oola was changed at every chieftain's house, sometimes we had yak, sometimes part yak and part ponies. As we were unwilling to have these animals for nothing, and the rupee was the lowest coin current, we found the return journey much more costly than the outward one.

We had a varied experience on our return journey, reaching Tatien-lu safely on June 20, after having experienced something of Tibet's rigorous climate. On June 19 we crossed the Cheh-to Pass, alt. 14,500 feet, in a blizzard of snow and sleet. I shall never forget that day. It was the hardest, roughest, and most exhausting one I experienced during the whole of my five years' wandering in China. Nothing but sleet, snow, and a strong biting wind the whole day through. Our beards, eyebrows, moustaches were a mass of ice; our garments were frozen as stiff as boards. Snow lay several feet deep near the head of the pass, and but for a path made by the fortunate passage of a herd of yak wending westward, we should never have found our way across the pass. As I look back on that day I marvel that we were not all frozen to death. As it was, several of the party were badly frost-bitten, and all suffered from snow-blindness. It was many weeks ere we fully recovered from the effect of the passage of the Cheh-to Pass on June 19, 1904.—*E. H. Wilson.*

(*To be continued.*)

NOTICES OF BOOKS.

THE STUDIO YEAR BOOK OF DECORATIVE ART.*

A BEAUTIFULLY got-up book, devoted especially to the application of art to the decoration and general equipment of the dwelling-house. The greater part of the volume does not specially concern us in these columns, though we can but admire the beauty of the illustrations and the excellence of the typography. The subject of garden furniture, however, comes within our province. Here we have to consider adaptation to purpose and situation as primary requisites, to which even beauty of form, excellence of workmanship, and quality of material must be subordinated. The style to be adopted must be harmonious with the surroundings, and, of course, is very much a matter of individual taste. Light, floriated, and elaborate ironwork, for instance, however beautiful in itself, does not accord with heavy stone piers and plain walls. Heavy, uncompromising wooden gate-posts are more suggestive of the lock-up than of the entrance to a garden, whether formal or natural. Plain, straight seats may be appropriate on a railway platform, but in a garden they are not suggestive of that repose which it is one of the main purposes of a garden to secure. As to the introduction into gardens proper of statuary, opinions will naturally differ. Our own feeling would be to banish them from the open garden, and to relegate them to the protection of the alcove or other shelter. Fountains and sun dials come under a different category. When well designed and in good proportion, they form admirable garden decorations. A certain amount of quaintness in them is not unpleasing, but there can be no reason why conventionality should, as it often does, degenerate into mere ugliness. Those desirous of securing "garden furniture" will, by perusal of this volume, and study of its beautiful illustrations, see for themselves what to avoid, and derive many valuable hints in selecting what is at once appropriate eand beautiful. [*Published at the offices of *The Studio*, 44, Leicester Square, London, price 5s.]

The Week's Work.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Lettuce.—In making future plantations, and until the hot weather is over, it will be better to select a semi-shady place for the maturing of this crop. Hot sunshine causes many of the varieties to run to seed quickly. In any situation a rich soil is necessary, and one that has had plenty of fresh dung dug into it is most likely to give the best results. Plenty of water should be given to ensure tenderness. Sutton's Superb White is one of the best Cos varieties to plant at this season, and Little Gem, which is also a Cos variety, has much to recommend it. This last-named variety is of a dark green colour, and does not readily run to seed, but becomes fit for use quickly.

Winter Green Vegetables.—From now onwards the plantations to yield the winter supply should be given much attention so that no failure in the supply may arise afterwards. Brussels Sprouts is the most important of these crops, and two or three plantations should be made so that the supply will continue from late autumn to late spring. Select the best plants for planting early, and encourage them to grow freely by watering them in dry weather, and by loosening the surface of the soil periodically between the lines. Savoys also must now be planted, and the latest varieties are usually the most valuable as they become fit for use when other vegetables are scarce. Sprouting Broccoli should be largely grown, as it is very useful in a severe winter. Broccoli is an invaluable crop, and to cut at this season it would be difficult to find a variety to beat Vanguard, so beautifully are the heads protected, and the curds in consequence rival early Cauliflowers in their purity.

Colewort Cabbage.—Make a good sowing now of this vegetable so that ground when cleared of early Potatos and other early crops may be profitably turned to account. Coleworts should be planted one foot apart each way.

Asparagus.—This crop is now in full bearing, being much later than usual, and gathering may in consequence be continued after the usual time. It is an excellent practice to feed Asparagus liberally when the plants are actively growing rather than apply winter dressings, which, on light soils, are apt to be washed away. Salt is an excellent stimulant for Asparagus. Wood ashes and bone meal tend to produce strong growth, and the stronger this can be made at this juncture the better it will be for next season's crop. Tie the growths to stakes or lines of string to make them secure against the effects of wind.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to SIR EDMUND G. LODER, Bart., Leonardslee, Sussex.

Peach and Nectarine Trees.—These should be finally disbudded, and in most cases finally thinned. Large fruiting varieties should be thinned to 9 inches apart at least, but 1 foot would be better. Pull off all those that are being pressed either against a nail or wire, or in between two branches, and all that have not a chance to develop to their full size. Train the growths into their respective positions; take out all laterals forming. Much light is required by the early varieties in order that they may develop colour. Such varieties as Waterloo, Amsden June, and Early Alfred should be afforded copious supplies of manure water, and be syringed every day, both from the right and left side, so that every leaf will be well washed. Diluted drainings from the farmyard are a very suitable manure. These may be used alternately with Richard's XL-all graduating manure. Afford thorough waterings, not driblets, and afterwards apply a short mulch, such as manure from a spent mushroom bed, or even a good coating of fine ashes, which is an admirable mulch for fruit trees. Keep the young shoots free from aphis by occasionally washing them with some insecticide, such as a solution of quassia extract, quassia soap, or carbolic soap. If these liquids are applied whilst moderately warm they will be more efficacious.

Apricots.—The above remarks apply equally well to Apricots, except in respect to the thinning of the fruits. Apricots may be left in much greater abundance, although they may require to be greatly thinned as the fruits usually set in clusters. Examine the trees carefully and destroy with the thumb and finger any maggots found on the leaves, or pick them off and drop them into a vessel containing a poisonous liquid. Apricot trees need much water, especially those growing against a south wall. If the border is very hard, make some holes with a fork before applying the water. Sometimes second and third waterings are necessary in quick succession. I believe that drought is largely responsible for Apricot trees suffering loss of branches, and occasionally perishing altogether.

Gooseberry bushes require to be carefully watched for maggots, which should be collected and destroyed by burning. Syringe the trees afterwards with a strong solution of quassia extract. Do not neglect this work for an hour, as the maggots are capable of doing an immense amount of mischief in a very short time. Take away all the fruits from the lower branches for bottling purposes.

Cherries.—Watch these trees and examine the foliage for the slug-worm or maggot. These are plentiful this season, and will soon despoil a tree if left undiscovered. Pick off all that can be seen, after which syringe the trees with quassia. If aphis is spreading, dust also with tobacco powder, or syringe the trees with the XL-all insecticide, if late varieties, but using quassia for the early varieties. Tie up the young shoots on cordon-trained trees, and stop the grosser branches and those badly situated. Apply water to the roots as often as may be necessary.

Strawberries.—These should be netted and strawed if the work has not already been done. The plants are flowering well, though somewhat late. Afford copious supplies of liquid manure to plants growing in dry borders.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Pot vines.—These will now be affording ripe fruit. When this has all been cut the vines should be removed to a cooler house, and subsequently, when they have become somewhat hardened, be placed out of doors, nailing the rods against a south wall to ripen the wood. Where room can be spared, they will give another crop of fruit next season, that is, if they can be allowed to grow naturally without subjecting them to high temperatures. But new vines must be procured for early forcing, as it would be a waste of time to put these rods into the forcing house again next season.

Black Hamburg vines.—Where these vines were started early, the berries will now be colouring, and the atmosphere of the house should be well ventilated on calm and mild days, and a "chink" left on all night. The temperature at night should still be kept at 65 to 68 degrees. Let the borders be well supplied with tepid water, and more especially where the borders are narrow and shallow. It is most important to admit some fresh air to the top of the house early in the morning while the Grapes are colouring, in order that the moisture in the atmosphere may escape, for if this is allowed to settle on the berries they will fail to colour satisfactorily. Where the Grapes have to be kept hanging upon the vines for any considerable length of time after they are ripe, the grower's skill will be taxed to preserve their colour and prevent the foliage on the vines from being infested with red spider. The only means to eradicate this insect are to carefully sponge each leaf with sulphur and water, keeping the borders uniformly moist, and to mulch the borders with long litter. Artificial heat should be employed very sparingly, only sufficient being used to expel moisture on dull days, and to keep the atmospheric temperature at about 60 degrees. If there is not sufficient foliage on the vines to afford a natural shade to the bunches, an old fish net placed over the glass double thickness will preserve the colour of the fruit during powerful sunshine. After the fruit has been cut thoroughly syringe the vines, and apply water to the borders. Cut back the lateral growths.

Cherries.—The young growths should be stopped at the third and fourth leaf. Now that the trees are well clad with foliage, and the days are longer and warmer, the trees will require closer attention as to watering, especially those that are growing in pots. Carefully tie in the growths needed for the trees' extensions, and vaporise the house on the first appearance of aphis. Discontinue syringing the trees when the fruit is approaching ripeness. Ventilate more freely on fine days, and leave a little air on all night. Some varieties will keep in good condition for several days after they are ripe if gathered and placed in the fruit room.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

The Application of Water to Plants.—Water is one of the chief necessaries of life, and is essential for the activity of all living organisms, whether vegetable or animal. By the application of water to the roots of a plant, it increases and quickens the vitality of the plant, and enables it, by means of the root-hairs, to absorb and assimilate the food-elements that are necessary for its increase. Success in plant growing very largely depends on the discretion that is shown in determining the quantity of water required by each plant. The serving of all plants alike, too often practised in some gardens in busy times, should be deprecated. Newly potted plants should be given a good watering to settle the soil about the roots soon after the operation, but following this only a moderate quantity will be required until the roots have permeated the new soil, and it is seen that the plant is again growing freely. When plants have filled their pots with roots (especially hard-wooded plants) care must be taken that these do not suffer from lack of a sufficient supply. Thoroughness in applying water to plants when they require it has a great bearing on the health of a plant. The syringe is now frequently used to supply the necessary moisture to the foliage of plants, but useful as this instrument is, there is a danger through the constant use of the same of the surface soil of a plant becoming very wet when the lower portion of the soil in a pot may be dry. This condition might easily occur in the management of Azaleas, Ericas, and other hard-wooded plants now making their growth. On the contrary, we may err in our judgment by giving water immediately we perceive the surface soil is dry, forgetting that probably the centre of the mass of roots and soil contains a large percentage of water, and in such circumstances as these the roots may gradually become suffocated by the exclusion of air. It is necessary to find out the exact condition of the soil. Because a plant required water twice or thrice yesterday, that is no reason why it should require as many applications each day. A change in the aridity of the atmosphere and the amount of moisture absorbed in the growth of a plant determine the necessity of a greater or less supply. Careless watering is the cause of a large number of diseases in plants, such as spot in Orchids, decay in bulbs, Azaleas going blind in the flower buds, etc. The temperature of the water about to be applied to plants should always be considered and made suitable.

The Final Potting of Chrysanthemums.—Every effort should be made to forward arrears of work in the plant houses, so that all available help may be forthcoming to assist in the re-potting of Chrysanthemums. When once this operation is commenced it should be carried through with as little delay as possible. Plants which are occupying 6-inch pots being now full of roots would very materially suffer should hot, dry weather set in. It is a good plan to prepare the compost to be used for potting purposes some little time before it is required for use. A very suitable mixture consists of good turfy loam, wood ashes, bone meal, old lime rubble siftings, and dust charcoal. The whole should be well mixed together, placed in a heap, and kept in a dry condition. Each plant should be staked previous to potting, and be sprayed over with the XL-all insecticide before being placed into open quarters.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Affording water.—Owing to the fickle climatic conditions of the atmosphere during the past few weeks, many cultivators have found the matter of affording water to their plants one of some difficulty. On some mornings when the sun is shining brightly, and there is every prospect of a fine day, the inexperienced grower is tempted to afford a thorough watering, but before mid-day the sky may become overcast, and very little sunshine be seen again for several days. The plants during the interval appear to be in a thoroughly saturated condition, and if the condition of the outside atmosphere is of such a character that sufficient ventilation cannot be employed to counteract this wetness, decay of the roots may result, especially of such plants as Cattleyas, Lælias, and their numerous hybrids. It is a very difficult matter to advise those who have not had much experience, as to the quantity of water necessary for these plants, but if the cultivator looks carefully over them, and lightly sprinkles the surface only of the compost whenever it appears to be dry, using a fine-rose watering can for the purpose, he will not be likely to cause them injury. As the weather becomes warmer and more settled, the quantity supplied may be gradually increased, especially to those plants that are growing quickly. Afford less to those that are in large pots and have a considerable mass of material to root in than to those which are well rooted in smaller pots. A larger number of these plants have been ruined by over-watering and insufficient ventilation than from all other causes combined. Aërides, Vandas, Saccolabiums, Angræcums, and others that are potted only in crocks and sphagnum-moss will require no more water than is sufficient to keep the moss on the surface in a healthy condition. All terete-leaved Orchids as Vanda teres, V. Hookeriana, V. Miss Joaquim, Dendrobium teretifolium, Scuticarias, Brassavola Perrini, B. stricta, and others that are grown on teak-wood rafts, etc., need syringing overhead at least once a day at this season. The whole of the Cypripediums should be given a good watering each time they become dry, C. bellatulum and its hybrids, being the only exceptions, as these plants appear to thrive better if allowed to become thoroughly dry and if less water be afforded them than is requisite for other species. The deciduous Calanthes still require careful and only light waterings until they are well rooted. Pleione maculata, P. lagenaria, etc., that are growing strongly in shallow, suspended pans, should now receive copious waterings at the roots and an occasional watering with weak liquid cow manure. P. humilis and P. Hookeræ will also require plenty of water, and should be suspended in a light, well-ventilated position in the cool house. Dendrobiums that have their young growths well advanced, and are rooting freely, should be well supplied with water, and be given a good syringing with tepid rain-water well up under the leaves to keep the foliage free from red spider and other insects. Care must be taken not to over-water Masdevallias of the M. Harryana and M. Veitchii types. The dwarfer growing kinds as M. Estradæ, M. Wageneriana, etc., are particularly liable to lose their leaves if too freely watered. The Chimæroid Masdevallias which are suspended from the roof in teak-wood baskets seldom require direct waterings if every morning the plants are taken down and the under side of the leaves well syringed with tepid rain-water.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Garden Vases.—In continuation of my remarks in last week's issue, I may point out that for filling certain kinds of vases, especially where desired for autumn decoration, Marguerite Carnations are singularly fitted; their growth is much more flexible than the ordinary Border Carnations, and the plants adapt themselves to the drooping position necessary for the successful furnishing of a vase. Sutton's strain of Nemesia strumosa is good for furnishing shallow, flat vases, or decorated boxes for placing on low walls if filled in distinct colours, when they are decidedly effective. A splendid show with this plant can be maintained throughout the summer months by a relay of vases and successional sowings. Terra-cotta vases 3 inches to 4 inches in depth are appropriate for the Portulaca, which also can be kept in distinct colours, and as some are very brilliant, an excellent display may be produced. Light, sandy soil suits the Portulaca, and the best plan is to sow seeds lightly into the vases where the seedlings are to remain, and thin the plants out afterwards, though the seedlings transplant readily enough. Once placed in the warm sunshine on walls of terraces, or elsewhere, they grow and come into flower very rapidly, remaining effective throughout the summer. The hotter and drier the season, the better will they thrive. Salvia patens, S. farinacea, and S. splendens are all deservedly popular vase plants. Plumbago capensis is a fine subject for planting in deep vases, particularly if the vases can be removed to a cool house for the winter months, and the plants can be kept growing on in them for several years. Where this can be done, it adds a striking feature, as the Plumbago grows gracefully and carries magnificent spikes of bloom possessing a pleasing blue colour, distinct from that of ordinary vase plants. A position out of doors should be selected that is as much sheltered from winds as possible. The New Zealand Flax (Phormium tenax) is suitable for large vases, where something bold and imposing is required. Their magnificent leaves, growing 5 and 6 feet in length, give a very handsome appearance to a vase, which is much enhanced when the plant throws up its giant flowering stems. In the southern and south-western counties the Phormium remains unhurt out of doors throughout the year, but in the north a vase filled with it would probably have to be removed to a frost-protected shed to enable it to stand the winter. Similar treatment would have to be accorded the Myrtle, Oleander, Sweet Verbena (Aloysia citriodora), Standard Heliotrope, and the more hardy Palms, which are all excellent subjects for certain phases of vase work.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

APPOINTMENTS FOR JUNE.

SATURDAY,	June 2	Soc. Franç. d'Hort. de Londres meet.
MONDAY,	June 4	Bank Holiday.
TUESDAY,	June 5	National Amateur Gard. Assoc. meet.
WEDNESDAY,	June 6	Roy. Hort. Soc. Exhibition of Colonial-grown Fruit (2 days).
THURSDAY,	June 7	Linnean Soc. meet.
SATURDAY,	June 9	Dutch Gard. Soc. meet.
TUESDAY,	June 12	Roy. Hort. Soc. Coms. meet.
WEDNESDAY,	June 13	Roy. Bot. Soc. Great Show in Regent's Park (3 days). Roy. Cornwall Show at Redruth (2 days).
WEDNESDAY,	June 20	Roy. Hort. Soc. Exhibition of Table Decorations, &c. Yorkshire Gala, York (3 days).
THURSDAY,	June 21	Linnean Soc. meet.
SUNDAY,	June 24	Midsummer Day.
TUESDAY,	June 26	Roy. Hort. Soc. Coms. meet.
WEDNESDAY,	June 27	Richmond Hort. Soc. Flower Show.
FRIDAY,	June 29	Roy. Bot. Soc. meet.
SATURDAY,	June 30	Windsor and Eton Rose Show. Dutch Gard. Soc. meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—59·3°

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, May* 30 (6 P.M.): Max. 68°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 31 (10 A.M.): Bar., 29.8; Temp., 60°; *Weather*—Overcast.

PROVINCES.—*Wednesday, May* 30 (6 P.M.): Max. 61 South-west Ireland; Min. 51° East Scotland.

SALES.

WEDNESDAY—

Palms, Plants, Begonias, Ferns, Geraniums, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY—

Imported and Established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Events of the Week. Of the Temple Show, held as these pages are passing through the press, what can we say that has not been said before? The circumstances of time and place forbid any great amount of variation as to grouping, though something in that way was this time attempted. Climatal vagaries such as we have had in such profusion this spring do not greatly affect such a Show as this, and no visitor, seeing this glorious exhibition, could imagine that the weather had been anything but kind. Looking back upon past years, it becomes evident not only that horticulture has made immense progress, and that a high standard of cultivation is more than maintained, but that taste has improved, and that more care is taken to eliminate inferior productions and commonplace materials than was at one time exercised. For this we have to thank not only the exhibitors, but also the officials of the Society, and here we should like to record our own obligations to the staff of the Society for the facilities afforded to our reporters. How greatly the services of Mr. Wright, the Superintendent, are appreciated is shown by the fact that he was made the recipient on Tuesday of a handsome testimonial in the shape of a gold watch and a purse of money. This recognition was made by the exhibitors, and those who know Mr. Wright's urbanity and willingness to oblige will feel that it was well bestowed.

The details of the Show are given in the following pages, so that it is not necessary here to do more than allude to certain special features. For specialists the Orchids take the first place, and the gem of the Show was the fine variety of Odontoglossum crispum known as Leonard Perfect, exhibited by Messrs. Sander and Sons, and of which we give two illustrations, both taken in the exhibition. The description will be found in our report of the Orchids. Before leaving the subject of Orchids, it is interesting to note the numbers of our Belgian friends who honoured us with their presence, and who contributed so much to the success of the exhibition—a welcome sign of the international character of the display. A German exhibitor, Herr Arends, of Ronsdorff, showed a remarkably fine strain of Primula obconica. The Hippeastrums from Messrs. Ker and Sons, of Liverpool, were specially attractive, not only for the fine form of the flowers, but for the delightful variations in colour, the rose-pink shades being particularly beautiful. One of these is figured on another page.

Roses were, as usual, lovely, as will be understood when the names of the Paul's, Cant's, and Turner are mentioned. New Roses of the Rambler type were largely in evidence with some beautiful hybrid Teas. The collection of Roses shown by Mr. Mount, of Canterbury, was so good that it narrowly escaped winning the Veitch Cup given for the best exhibit in the Show, but which was this time awarded to Messrs. Sander and Sons for their collection of Orchids and new plants. Well, indeed, have Messrs. Sander earned this coveted distinction. The Rhododendrons from Messrs. J. Waterer and Sons were wonderfully beautiful; and the group of Azaleas and similar plants set up by Messrs. Cuthbert was as fine as usual. Cannell's Cannas were also surprisingly brilliant. Out of doors were the usual groups of choice trees and hardy shrubs from Messrs. Cripps, Russell, and others, whilst Messrs. Cutbush outdid themselves in the splendid and tasteful group they exhibited, of which we hope to give an illustration in our next issue.

In Mr. Russell's collection were shown some seedlings raised from a cross between Genista Andreana and G. scoparia var. prostrata. The seedlings showed the coloured flowers of Andreana and the prostrate habit of the prostrate form, and these peculiarities, we understood, are reproduced in the next generation.

Messrs. Veitch and Sons had, in a rather exposed position, a selection of their novelties, including the noble Meconopsis integrifolia, the wonderfully-coloured Primula Cockburniana, P. sibirica, with long-stalked oblong glabrous leaves and lilac flowers with a white eye; the yellow-flowered P. orbicularis, recently described in our columns; Androsace Henryi, with cordate orbicular leaves and heads of small white flowers; Cypripedium tibeticum, a hardy herbaceous species, with a remarkable lip, of which we give an illustration on another page.

The Temple Show attracts gardeners from all parts of the country, and gives us an opportunity of seeing friends and associates whom we should not otherwise have the opportunity of seeing. Among the numerous meetings of the week we may say that the annual gathering of past and present Kewites took place on Monday, 28th ult., at the Holborn Restaurant, London. Prior to the dinner the annual general meeting of the Guild was held, under the presidency of Mr. W. Watson, the chief business being the reading and adoption of the annual report. The Chairman, in the course of his remarks, observed that, although the Guild fulfils to everyone's satisfaction the objects for which it was formed, he was of opinion that it might be more progressive and exert itself to promote the interests of gardening generally. One hundred and thirty-five members subsequently sat down to dinner, and among them were seen many old Kew men from distant parts, including Davies (Lucknow), Dawe (Uganda), Fox (Penang), Hislop (Pietermaritzburg), Johnson (Gold Coast), MacMillan (Ceylon), Wilke (Rotterdam), etc. Mr. B. Daydon Jackson, F.L.S., presided, and he was supported by, among others, Lieut.-Colonel Prain, Director of Kew; Dr. Henry, Mr. R. I. Lynch, M.A., A.L.S., etc. The Chairman, in proposing the toast of the evening, "The Kew Guild," remarked on the good work such an Association did in linking up past Kew men with those at present engaged in the Gardens. The great event of the year, he said, in connection with Kew was the retirement of Sir W. T. Thiselton Dyer, K.C.M.G., from the directorship, and the appointment of Lieut.-Colonel Prain to the post. Mr. John Weathers replied. He said the Guild welcomed its newest member in the present director, Lieut.-Colonel Prain, although regretting the absence of their old chief, Sir W. T. Thiselton Dyer. Mr. Weathers supported Mr. Watson's recommendation that the Guild should endeavour to help any organisation that exists for the benefit of gardeners. Dr. Henry proposed the health of Lieut.-Colonel Prain, and the company took advantage of the opportunity thus given them for demonstrating their cordial welcome to the director, who responded in a sympathetic speech that was much appreciated. The Guild meetings serve to show the spirit of comradeship that exists among all sections of Kew men, and it was gratifying to hear from Lieut.-Colonel Prain, who, when in India, employed and worked with a large number of Kew men, that he had always found them to be reliable, and, though not all equally capable, yet equally straightforward, honest, and enthusiastic in their work.

The inaugural meeting of the Winter Flowering Carnation Society was held on Tuesday evening, when Mr. Brunton was elected President and Mr. Mathias, Secretary. There are about 70 members, and the balance is on the right side.

The annual meeting of the British Gardeners' Association, the rules of which have now been revised so as to remove all objections and serve to bind the gardening community into a strong, self-helping body, helpful to individuals but aggressive to none, took place on Wednesday evening. The published rules and recommendations were adopted with slight modifications, the amendments having respect to management rather than to policy. The executive council will now consist of 24 members. Mr. John Weathers was elected secretary, and Mr. E. F. Hawes, treasurer. It was decided to institute a junior branch of the association for members under 20 years of age.

SUPPLEMENTARY ILLUSTRATION (TECOMA BRYCEI, N. E. Br.).—Our illustration was taken from a photograph obligingly forwarded to us by Dr. FRANCESCHI, of Santa Barbara, California, under the name of Tecoma reginæ sabæ, in allusion to the splendour of the flower. We find on enquiry that Dr. FRANCESCHI has been forestalled, and that the plant has already been described by Mr. N. E. BROWN in the *Kew Bulletin*, 1901, p. 130, as Tecoma Brycei. There is a discrepancy in the description of the colour of the flower, which Mr. Brown describes as "lilacina," but he was dealing with herbarium specimens, whilst Dr. Franceschi describes from the living plant. The plant was found in Mashonaland by the Rt. Hon. J. Bryce, after whom it is named. We need not repeat the technical description given by Mr. Brown, but merely append the cultural notes with which Dr. Franceschi has favoured us. "Seeds of an undetermined Bignoniad were received here, from Rhodesia, a few years ago. The plants grew with great vigour, and came in bloom for the first time in October, 1904, profusely blooming until the following May. At the beginning of October, 1905, they were in bloom again as they are at the present date, March, 1906. This long period of blooming will recommend the plant very highly, wherever it can be grown in the open, as well as for large conservatories. But there are other points to its credit. First, it is an exceedingly rapid grower, and in a very short time will make thick masses of light green and very finely cut foliage, almost mimicking a giant Asparagus at a distance. The panicles of flowers are very large, numbering up to 100 blooms opening in succession, the individual flowers being of the size of those of Tecoma grandiflora. Their shape and their rich rosy crimson colour are suggestive of Gloxinias. They are also very delicately scented, not a common occurrence in the order. This new Tecoma is sure to take rank among the best winter-blooming climbers, like Bignonia venusta and the Bougainvilleas. From the well-known Tecoma Ricasoliana, of Tanfani (T. McKenni, Watson), it is quite distinct both in foliage and in flower, as well as for its season of blooming, the flowers of the latter appearing only during summer." *Dr. F. Franceschi, Santa Barbara, California, March, 1906.*

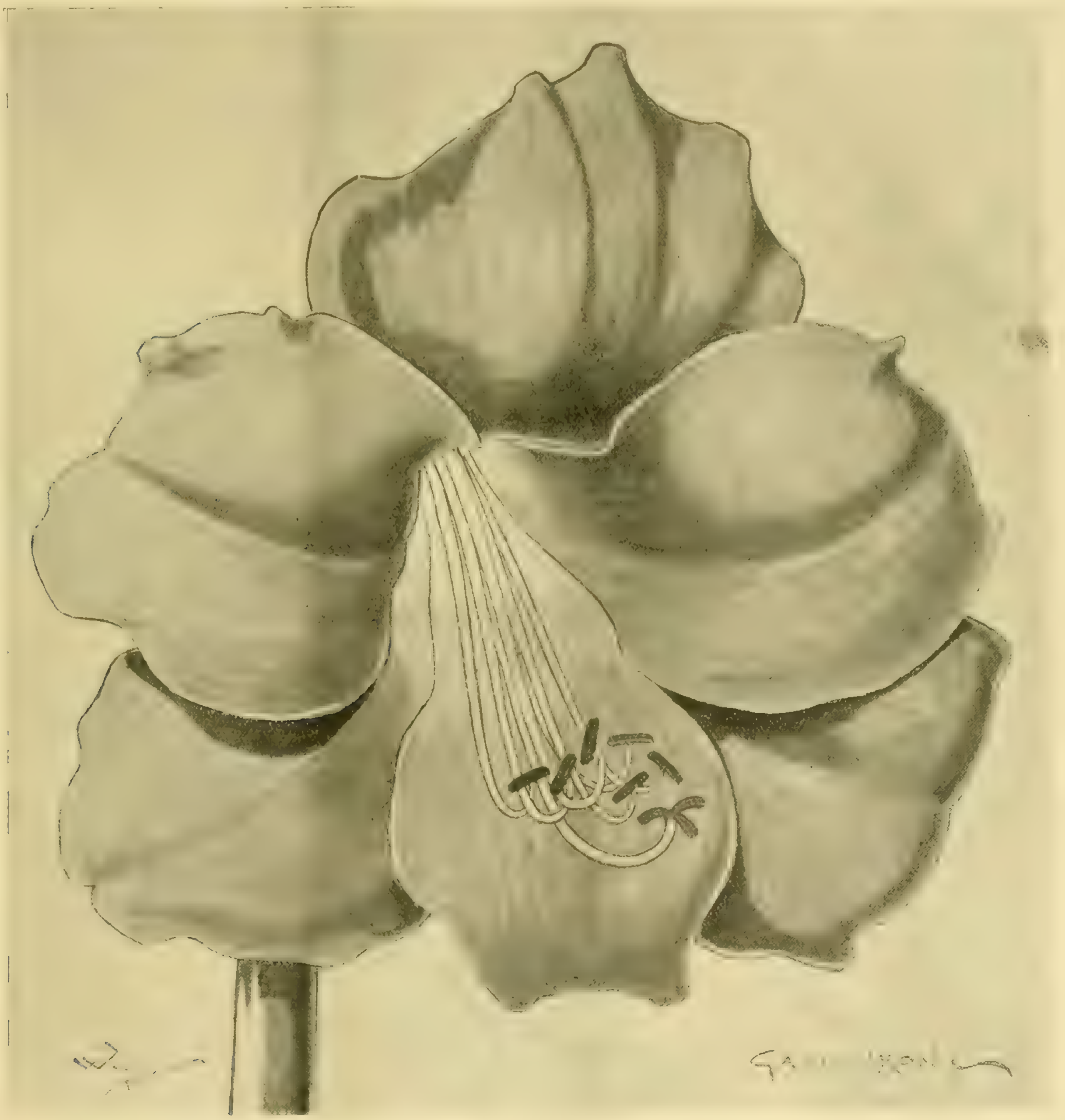


Fig. 137.—Hippeastrum "Madder Rose," a variety showing a new shade of colour.
(From a sketch made at the Temple Show by Mr. Worthington Smith. See "Awards" p. 353)

Flowers in Season.—Mr. E. Fowler, of Pontypool, kindly sends a fine spike of Ansellia africana, cut from a plant covering a space of 6 feet 6 inches, bearing seven similar spikes. Though not exactly a popular Orchid, this is certainly one of the most attractive and fragrant, and the specimen sent attests the excellence of the cultivation.

Fifty Pounds for the Gardeners' Benevolent Institution.—As a result of the production of the operatic play "On Puddleton Quay," by Mr. Edward Sherwood, of which a note was previously published on p. 298, we are glad to be able to state that Mr. Sherwood has been enabled to hand over £50 to the Gardeners' Royal Benevolent Institution, and a similar sum to the Corn Exchange Benevolent Institution.

The Eruption of Vesuvius.—Mr. Sprenger, of Vomero, Naples, sends us specimens of a remarkable Auricula with very large flowers. In spite of a deposit of 4 to 5 centimetres thick of ash, this Auricula has not suffered. Primula Palinuri, P. erosa, and others, are in good condition, but P. megaseæfolia and P. Sieboldii have suffered severely, but are now recovering.

Linnean Society.—The annual meeting was held on May 24, Prof. Herdman in the chair. In the President's address the chief events of the year were summarised and a further communication on the mode of production of pearls was made. The number of new Fellows elected was not so large as in the previous year, when numerous ladies availed themselves of the provision of the new charter and became Fellows. The financial condition of the society is satisfactory, and excellent work continues to be done by the Fellows. The Gold Medal was this year awarded to the Rev. Canon Norman, an authority on Crustaceans. In acknowledging the honour conferred on him the recipient alluded to the great desirability of workers in any department having in addition to their work a hobby. Change of occupation rather than rest was most desirable for those in good health. A meeting will be held on Thursday, June 7, at 8 p.m., when the following Papers will be read:—1, On two new species of Populus from Darjeeling, by Mr. H. H. Haines, F.L.S., &c.; 2, Biscayan Plankton, Part VIII. The Cephalopoda, by Mr. W. E. Hoyle, M.A., &c.; 3, Biscayan Plankton, Part IX. The Medusæ, by Mr. E. T. Browne, F.Z.S., &c.

Flower Shows at Birmingham.—The first of two special Flower Shows which have been arranged to take place in the Botanic Gardens, Edgbaston, Birmingham, will be held on June 13, from 12.30 to 7 p.m. The movement has met with encouraging support, and intending exhibitors are asked to notify their entries to the secretary as early as possible, that the necessary arrangements may be made.

Sale of Orchids (See also p. 355).—The sale of 89 plants from the collection of N. C. Cookson, Esq., Oakwood, at Messrs. Protheroe & Morris, Central Sale Rooms, Cheapside, on Tuesday, May 29, attracted a large and appreciative audience composed of British and Continental Orchid experts. The total sum realised was within a few shillings of £4,000. Blotched Odontoglossums are still the favourites, small plants of O. crispum Franz Masereel went for 500 gns.; O. c. Mundyanum, 450 gns.; O. c. Graireianum, 900 gns.; O. c. purpurascens, 55 gns. and 60 gns.; O. c. Cooksonianum, 75 gns.; O. c. Peetersii, 50 gns.; O. c. Harold, 150 gns.; O. c. Chapmanii, 55 gns.; O. c. Frederick, 130 gns.; O. c. Rossendale, 240 gns.; O. c. Cooksoniæ, 220 gns., and others realised proportionately good prices. The plants were in excellent condition, and reflected credit on Mr. H. J. Chapman, the gardener at Oakwood.

Burbidge Memorial.—The members of the Irish Gardeners' Association being anxious to establish a permanent memorial to the late F. W. Burbidge, M.A., V.M.H., who not only in his capacity of president contributed largely to the sound basis on which it now stands, but so closely identified himself with the best interests of gardening, have concluded that of several suggestions made as to the form such memorial should take, a library, to be called the Burbidge Memorial Library, is the most suitable. The Burbidge Memorial Library is intended for the use of the Irish Gardeners' Association, the members of which are distributed over a wide area of the country; and whilst due provision will be made for the care and keep of the library at the headquarters of the association in Dublin, facility will be afforded for country members to obtain the benefit of the same by supplying them with such works as they may require for study or reference, by post or otherwise: rules and regulations will be formulated, that whilst safeguarding the memorial its usefulness will not be hampered. To make the library worthy of its object as a memorial, it is the feeling of the special committee constituted to carry it out, that in spite of the cheerful and ready response of the members, more help is necessary than can be obtained within the limits of the association, but that the late Curator of the Trinity College Botanic Gardens, having been so widely known and universally respected, this memorial will sympathetically appeal to many garden-lovers who knew him. To this end the committee respectfully ask the kind consideration of the matter, and whether it be direct pecuniary assistance for the purchase of books, or the gifts of any botanical or horticultural works, either will be equally esteemed. Contributions to the fund, or gifts of books will be gratefully received and duly acknowledged by the hon. secretary, or George Watson, Esq., hon. treasurer, 10, Dame Street, Dublin. *E. Knowldin, hon. secretary, Burbidge Memorial Committee.*

DAVIDIA INVOLUCRATA.

Among the most remarkable introductions from China of recent years is the tree named after its discoverer, the Abbé David. Seeds were sent to M. Maurice de Vilmorin, who kindly sent us, in 1899, a photograph of a seedling plant, and now adds to our obligations to him by sending a photograph of the plant as it has flowered this year. The tree belongs to the Cornel family and is chiefly remarkable for the large cream-coloured bracts which surround the relatively inconspicuous flowers.

On April 11, 1903, we gave a description and full-page illustration of the plant from dried specimens collected by Mr. E. H. Wilson, for Messrs. James Veitch & Sons, in whose nurseries, at Combe Wood, this plant is now growing. As M. de Vilmorin remarks, there is a good deal of variation in the form, coloration, and size of the bracts in individual specimens, and it is not unlikely that these variations will also prove to be seasonal, in so far that the size and colour of the bracts may differ in different seasons.

In any case we are under great obligations to M. Maurice de Vilmorin for the opportunity of figuring the plant as it first flowered in Europe. The tree is believed to be quite hardy.

Mr. Hemsley has contributed to the *Journal of the Linnean Society*, June 18 (1903), p. 556, a description of the germination of the seed, which presents some interesting features.

CYPRIPEDIUM TIBETICUM.

This handsome hardy species was shown at the Temple Show on the 29th ult., where it was drawn by our artist, Mr. Worthington Smith. It is one of the many species introduced to the Veitchian nurseries by Mr. E. H. Wilson, who found it at Tachien-lu, in Western Sze-chuan. It was described in the first instance by Rolfe, in the *Journal of the Linnean Society*, XXIX., p. 320, and again in the *Orchid Review* (1905), p. 194. It is nearly allied to C. macranthum, and is remarkable for the purplish netted venation of the sepals and petals, and for the large globose pouch-like lip, which is of a blackish purple colour. Mr. Wilson states that it is very common on the Chino-Thibetan border at an elevation of 10,000 to 13,000 feet, where it grows in profusion.

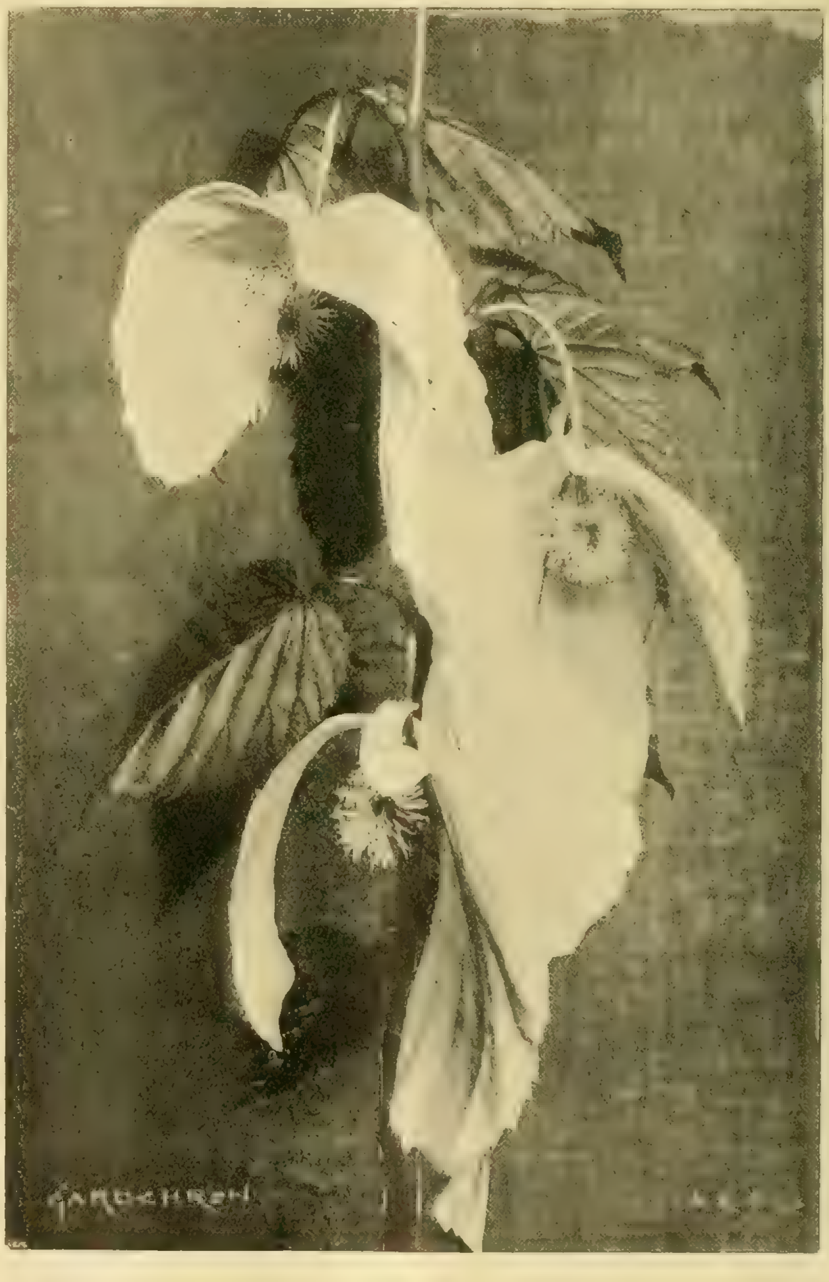


Fig. 138.—Davidia involucrata, a hardy tree; flowers surrounded by large cream-coloured bracts (reduced).

(From a photograph of M. Maurice de Vilmorin.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

The Daffodil.—I had the pleasure of presenting a spray bouquet composed of Bicolor Grandee Daffodil to Her Excellency the Countess of Aberdeen on her visit to Cork on May 17. It was made up with its own foliage, and Her Excellency was so pleased with the offering, and one in our warm climate so out of season, that she carried it all day, and even took it back to the Viceregal Lodge, Dublin. Her Excellency is known to be fond of Daffodils. The bulbs were not planted until the middle of March, and were put in a cool north border. At this date many of the flowers are still at their best. *Wm. Baylor Hartland, Ard Cairn, Cork.*

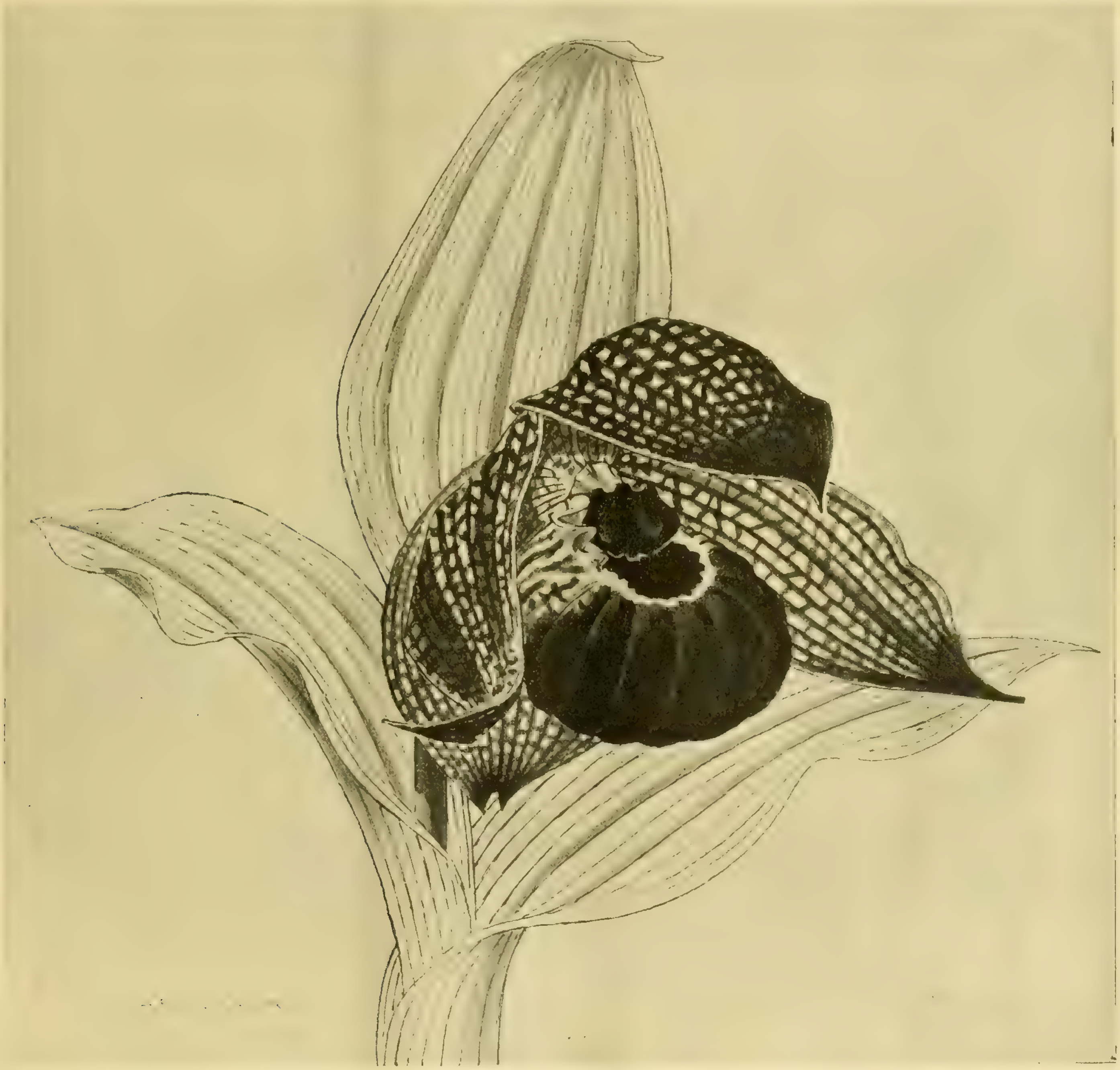


Fig. 139.—Cypripedium tibeticum, real size, a new hardy species sketched at the Temple Show by Mr. Worthington Smith.
(For text see page 346.)

Spring Cabbages.—I was very interested, but somewhat surprised (see p. 333), to hear of the bad behaviour of my old friend, Ellam's Early Dwarf, in prematurely running to flower in some parts of the country. I have always regarded the non-bolting of this variety as a strong point in its favour, and, in addition to its hardiness, earliness and good quality, it is, in my opinion, when a strictly true strain is grown, an ideal Cabbage both for the private and market-gardener. Sutton's Flower of Spring is unquestionably a very valuable variety, and one we always grow to succeed Ellam's Early Dwarf. It comes wonderfully true, seldom runs to flower, and grows two sizes larger than Ellam's Early. We have been cutting Ellam's since Easter, and now Flower of Spring, forms a capital succession. We always make two sowings and three or four plantations, the first about July 25 and a second from August 10 to 15. This season not a single plant of either of the above-named varieties has bolted here out of three large batches—the first time I ever remember being quite free from this defect. Unfortunately stocks vary considerably, which may possibly be responsible for the cases previously cited. Others, perhaps, would give their experience. *E. Beckett, Elstree.*

Apple grafted on Hawthorn.—On walking between the hedgerows recently at Hampton, Middlesex, I saw an Apple scion grafted on a Hawthorn stock. The Apple portion of the tree was a mass of bright pink-coloured bloom, and, conditions proving favourable, there appeared no reason why the flowers should not set. The Hawthorn portion will bloom later. The grafting must have been effected some few years since. The tree was about 10 feet high, and the scion and stock had developed in a fairly equal degree. The phenomenon suggested, among other matters, the possibility, with an accommodating stock and grafts of suitable flowering trees, of having a tree in bloom for a considerable time, which could be made decorative if the grafts were inserted in a way that would conduce to artistic effect at the different blooming periods. *R. T. Hesketh.*

Cucumber Carter's Earliest of All.—This is a valuable Cucumber for very early forcing, being an exceedingly quick grower. We cut fruits this spring in exactly a month from the time of planting. From plants put out of large 60's size pots on February 22 we cut well-shaped fruits on March 23. The fruits are of good colour and handsome appearance. I consider it to be the earliest Cucumber in cultivation. "Model" and "Ideal" are famous varieties to follow. Both are very handsome and good fruits for exhibition purposes, being perfect in outline and having scarcely any perceptible neck, and in places where these fruits are sent to the table whole, they are exceedingly valuable. *W. A. Cook, Leonardslee Gardens, Horsham.*

Royal Horticultural Society.

THE TEMPLE SHOW,

MAY 29, 30 and 31.

THE nineteenth annual Show in the gardens of the Inner Temple, Thames Embankment, was opened by the Royal Horticultural Society on Tuesday morning last, and the exhibition will remain open to the public until Thursday evening, after these pages have gone to press. Notwithstanding the high quality that has characterised these exhibitions in the past, it may be said, without fear of contradiction, that the display made during the present week is at least as meritorious as that in any preceding exhibition considered as an illustration of British horticulture. Favoured with delightfully fine weather on the opening day, the tents and gardens also were thronged with visitors during the whole of the afternoon; indeed, the number of visitors appeared to be greater than ever; and doubtless there were many who, having come to see the show, were unable to get more than a cursory glance at the individual exhibits. This is undoubtedly a serious disadvantage, but it is a penalty inflicted by the wonderful success that these shows have attained, and so must be borne with more or less patience so long as the conditions remain unalterable as they appear to be at present.

MR. S. T. WRIGHT, THE SUPERINTENDENT OF THE R.H.S. SHOWS.

The Orchid and Fruit Committee met for the inspection of novelties just as at ordinary meetings, although on this occasion the members of the Fruit and Vegetable Committee did not meet in an official capacity. The groups of plants, flowers, fruits, and vegetables were, as is usual at "Temple" shows, inspected by judges specially selected by the council, who made awards as printed on p. 355. These special shows of the society cannot be held without their imposing an immense amount of work upon the society's officials, especially on Mr. S. T. Wright and Mr. Frank Reader and the members of their staffs. In this connection we are glad to note, as was pointed out on another page, that the trade exhibitors have taken means to show their appreciation of the energy and tact exercised by Mr Wright by presenting him on the first day of the show with a handsome gold watch and chain and a purse of 85 guineas. Mr. W. Penrose Atkinson acted as secretary and treasurer for this subscription, and the formal presentation was made by Mr. Arthur W. Sutton. There were more exhibitors at the show than on any previous occasion, and the amount of space that could be allotted to each was therefore rather less than formerly.

Orchid Committee.

Present: Harry J. Veitch, Esq., V.M.H. (in the Chair), and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, H. Little, A. A. McBean, H. J. Chapman, T. W. Bond, R. Brooman-White, G. F. Moore, J. W. Odell, W. Boxall, W. H. Young, H. A. Tracy, A. Dye, H. T. Pitt, W. Cobb, W. Bolton, J. W. Potter, F. M. Ogilvie, H. G. Alexander, F. J. Thorne, H. Ballantine, and W. H. White.

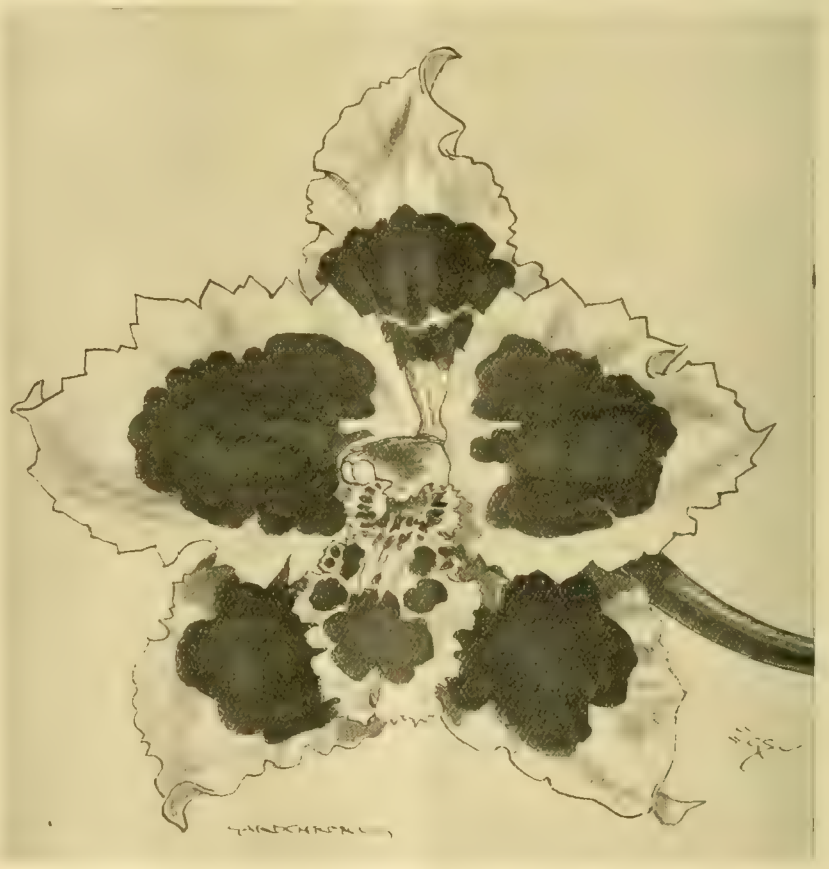


FIG. 141. SINGLE FLOWER OF ODONTOGLOSSUM CRISPUM "LEONARD PERFECT," REAL SIZE, AS SKETCHED BY MR. WORTHINGTON SMITH AT THE TEMPLE SHOW.

The number of fine groups staged was equal to that in previous years, the magnificent and excellently-arranged group of Messrs. Sander & Sons being probably the best—all things considered—ever staged at the Temple, and securing for the exhibitors the coveted distinction of the Veitchian Cup. On one side of the broad central staging in Tent 5, at the entrance, was the extensive and interesting group of Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound). The background was of Cymbidiums and other showy species, with arching spikes, and the body of the group was set out with batches of fine Odontoglossum crispum, Miltonia vexillaria, brilliantly coloured Masdevallias, &c., the front centre being of nice specimens of the pretty white Cypripedium niveum, one plant having eleven flowers, and other dwarf species, colour being given by scarlet Cochlioda Noezliana and Epiphronitis Veitchii. Specially noteworthy were the distinct Odontoglossum crispum varieties Mary Colman (with four spikes), Margery Tyrrel Giles, Colmanæ (with three spikes), Rosy Queen (four spikes), Eleanor, and Mrs. J. Colman; Cypripedium Lawrenceanum Hyeanum, C. callosum Sanderæ, Cattleya Mossiæ Reineckiana, Wageneri, and the beautiful C. M. Mrs. Jeremiah Colman (see Awards); the distinct slate-blue lipped C. intermedia cœrulea, Laelio-Cattleya Canhamiana, Gatton Park variety, and other hybrids, fine forms of Miltonia vexillaria, the graceful orange-scarlet Epidendrum Boundii, and other hybrid Epidendrums, &c.

Next came the magnificent group of Messrs Sander & Sons, St. Albans, already alluded to, which included several fine novelties, but which, following their usual custom at the Temple Show, were not entered for Awards. Of these the grand Odontoglossum crispum Leonard Perfect was a noble form, with large and finely-formed flowers, and unique in the blotching, the colouring being displayed in one large, light, red-brown blotch on the middle of each segment, a broad white margin and base showing the blotching very distinctly. The lip is white, with several brown blotches, and the whole flower unlike anything else in this coveted section of Odontoglossums (see figs. 141 and 142). Equally good as a hybrid was O. ardentissimum "Countess of Tankerville," a large and beautiful white flower, exquisitely marked, and blotched with rose-purple. Other good forms of O ardentissimum, and other hybrid Odontoglossums including several forms of the handsome O. Lambeauianum. Among Lælio-Cattleyas L.-C. × Golden Glory (L.-C. × Zephyra × C. Mossiæ Reineckiana) was a charming new yellow variety, with reddish rose front to the lip, the fine plant having twelve flowers; forms of L.-C. Canhamiana, L.-C. calistoglossa, L.-C. Haroldiana, &c. The forms of Cattleya Mossiæ included a good selection of white varieties, C. M. Reineckiana Hardy's variety, still one of the best. C. Mendeli Our Queen was a pretty blush white, and contrasted well with the dark varieties. Other fine things noted were Zygopetalum "Sir Trevor," a very handsome natural hybrid of Z. rostratum, Brasso-Cattleya Mrs. Leeman var. fimbriata, with rose-tinted yellow flowers heavily fringed; Phalænopsis Sanderiana, Oncidium Englerianum, a very singular species; Cymbidium Huttoni; the pretty Camarotis purpurea, Renanthera Imschootiana; the fine Miltonia vexillaria Lambeauiæ, a bright rose-purple variety, with white base to the lip, having pretty yellow and red rays; an interesting pan of Epidendrum Endressii hybrids; the new Dendrobium Fletcheri, white with scoop-shaped, claret-coloured lip, several new Cypripediums, and the rare C. glanduliferum, Aerides Houlletianum, &c. The group was most artistically arranged, and formed one of the greatest attractions in the show, not only to the Orchid specialist but also to the ordinary visitor.

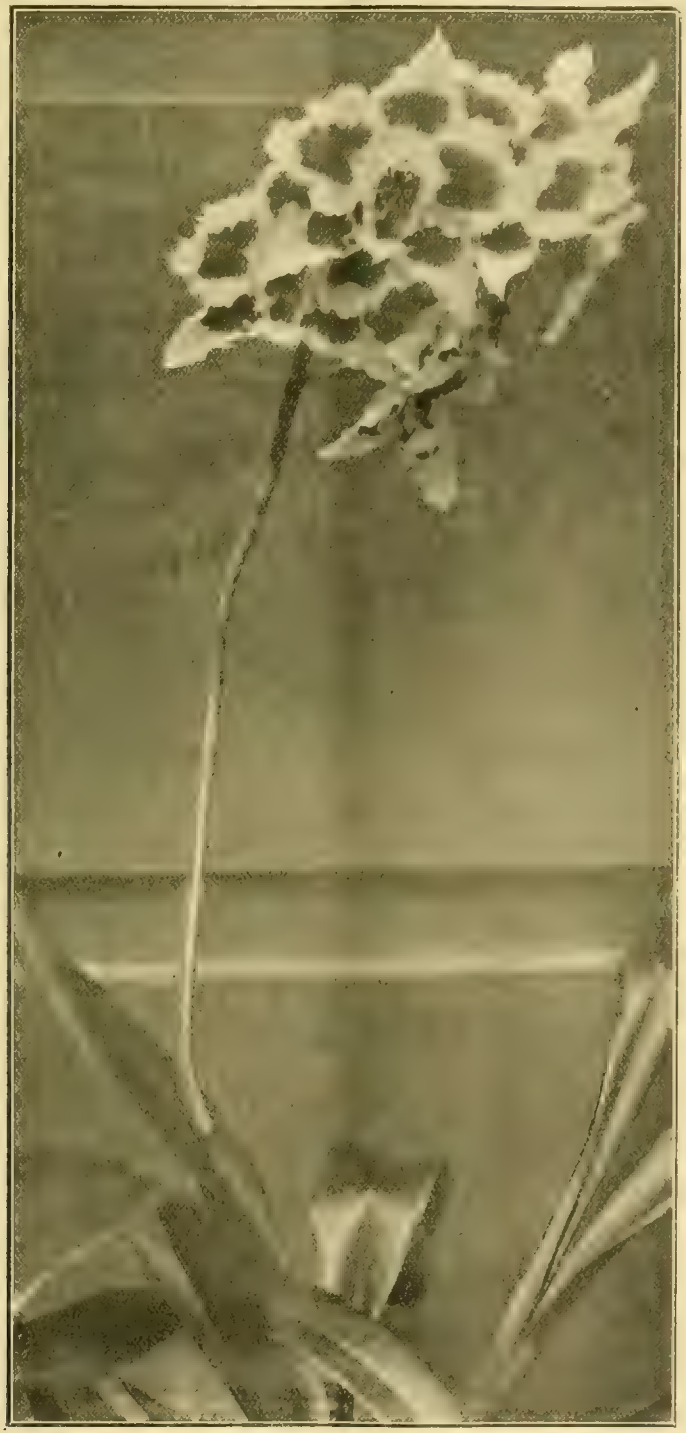


FIG. 142.—ODONTOGLOSSUM CRISPUM "LEONARD PERFECT," FROM A PHOTOGRAPH TAKEN AT THE TEMPLE SHOW—REDUCED. For single flower, see fig. 141 p. 348.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, followed with a remarkably fine group, also excellently well arranged by his Orchid grower, Mr. W. H. Young. In the centre at the back were several fine pure white Sobralia macrantha alba, with a score of flowers, in front of which was a specimen of Dendrobium Falconeri, with about one hundred white and purple blooms, beneath which was a representative collection of Cypripedium bellatulum, C. niveum, &c. Odontoglossums embraced fine forms of O. crispum, O. polyxanthum, O. Wilckeanum Oakwoodense, O. ardentissimum, O. excellens, O. Ossulstoni, and others. The Phalænopsis included P. speciosa, P. violacea, P. Luddemanniana, and P. grandiflora. At intervals were selections of Thunias, Vandas and Zygopetalums, the last including the fine Z. Roeblingianum, with six spikes. Cypripediums were represented by some 20 good species and varieties; Cattleyas by a fine selection of C. Mendeli, C. Mossiæ, C. Schröderæ, delicate and various hybrids, Lælia purpurata included L. p. Russelliana, and some of showy Lælio-Cattleyas, L.C. calistoglossa bore four fine flowers; C. Canhamiana six blooms on one spike; and Baden Powell, Fascinator, G. S. Ball, Vinesiæ, and others were well shown. Bright colours were given by forms of Masdevallia Harryana, M. Veitchiana, and other species; Maxillaria Sanderiana bore four flowers; Ærides Fieldingii three spikes; and various other showy and interesting species were included, the collection representing 25 genera, 57 species, 9 varieties of species, 29 hybrids, and a further selection of cut spikes.

Mrs. ERNEST HILL, Redleaf, Penshurst (gr. Mr. Ringham), exhibited a group of nice plants of Miltonia vexillaria, very finely flowered.

Messrs. WILLIAM BULL & SONS, Chelsea, had an excellent group, in which most of the showy Orchids of the season were well represented. The central specimen was a good example of the rare Madagascar Cymbidium rhodocheilum, with a fine inflorescence of flowers, with prominent red lips. It was illustrated in the *Gardeners' Chronicle*, June 17, last year. Cattleya Mendeli varieties were good, the best being ignescens, Princess of Wales, Countess and Diadem; Lælia purpurata King Alfonso, Prince of Wales, and Rhoda, all good and distinct; Odontoglossum crispum varieties were good, and included a nice form of var. xanthotes. O. Harryanum nigrum was a fine and a very dark flower. The group also contained a great variety of good and interesting species, including some strong examples of Vanda tricolor and suavis.

Messrs. HUGH LOW & Co., Enfield, staged a very fine group on the other side of the central staging. Many typical forms of Odontoglossum crispum were included, and a good plant of the marvellously handsome O. crispum Fearnley Sander, which stands well in the front rank of these fine and costly Orchids. The large flowers had the greater part of their segments heavily blotched with reddish purple, and there seems to be no other like it in the section. The large-flowered Cattleyas were specially fine in this group, C. Mendeli "Mercury" being a grand flower, and the lighter C. M. "Fame" very distinct. An unnamed blush-white variety was very distinct, and great variation and excellence were evident in the whole strain which Messrs. Low imported. Lælia purpurata varieties were exceptionally good, L. p. Lowiæ, a light variety of a peculiar pale lilac-pink tint, with fine, dark lines in the lip, being remarkable; L. p. Coheni, with very dark lip, showy, and others very attractive. White and coloured forms of Cattleya Mossiæ, a good Cœlogyne pandurata, C. intermedia alba, and some interesting "botanical" Orchids, including Cirropetalum picturatum, Vanda Denisoni, Epidendrums, &c., were grouped at one end.

Mrs. A. B. COLLINGWOOD, Lilburn Towers, Alnwick (gr. Mr. Lovett), had a neat group of finely-flowered Vanda teres and Dendrobium Falconeri, which made an attractive exhibit.

Mr. GEORGE BRONCKART, Charleroi, Belgium, staged a small group of the new Cymbidium Sanderi, with tall spikes of large blush-white flowers, marked with crimson on the lip. (Illustrated in the *Gardeners' Chronicle*, February 25, 1905.)

R. ASHWORTH, Esq., Ashlands, Newchurch, Manchester (gr. Mr. Pidsley), had an effective group of rare Odontoglossums, &c. The central plant was Odontoglossum crispum "Coronation," a very large, white flower, with heavy, pale brown blotches—a distinct and handsome form. With it were other good spotted Odontoglossums, including O. Pescatorei Charlesworthii, and O. Ashlandense (polyxanthum × Adrianæ). Also good O. loochristyense, Cypripedium callosum Sanderæ, Miltonia vexillaria "Fairy Queen," and good Lælia purpurata.

M. CHAS. VUYLSTEKE, Loochristy, Ghent, staged a very beautiful collection of hybrid Odontoglossums, grown and flowered in his usual excellent manner. The parentage of some of these handsome hybrids can only be guessed, but all are beautiful. They comprised O. amabile "Goliath," O. graciosum, O. concinnum Bijou, varieties of O. percultum, O. rubicans, O. Wilckeanum "Thalia," and three very fine forms of O. ardentissimum.

Messrs. JAS. CYPHER & SONS, Cheltenham,

staged a very bright and effective group, in which were Lælio-Cattleya Canhamiana in several very fine varieties, L.-C. Baroness Schröder, L.-C. Ingrami, L.-C. G. S. Ball, L.-C. Lady Miller, Brasso-Cattleya Digbyano-Mossiæ, and other hybrids; a fine selection of Lælia purpurata, including Schröderiana, Empress, and Duchess; good Cattleya Mossiæ and C. Mendeli; C. intermedia alba; finely-flowered Miltonia vexillaria, the finest varieties being Cobbiana and leucoglossa; the pretty Miltonia Endresii; a fine Dendrobium nobile superbum, D. atro-violaceum, and D. thyrsiflorum; some twenty excellent Cypripediums, including Maudiæ and the showy Cypher's variety of Charlesianum; a very fine selection of Odontoglossum crispum, O. luteo-purpureum excellens, O. Pescatorei, O. Hallii, Oncidium Marshallianum, phymatochilum, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a magnificent group, replete with good things, and especially in their fine hybrids. At the back were specimens of Cymbidium Lowianum, groups of good Odontoglossum crispum, Phalænopsis Rimestadtiana, and other Orchids with graceful sprays of showy flowers. At one end was a grand specimen of the large, clear, yellow Anguloa Clowesii, with thirty-seven of its showy Tulip-like flowers. The Cattleya Mossiæ included twelve white varieties, and with them were two of the fine white Cattleya Mrs. Myra Peeters. Hybrid Odontoglossums were well represented, some of the best remarked being O. Othello, O. Phœbe, O. ardentissimum, "The Countess," a pretty white flower, showily blotched with rose-purple; two forms of O. Lambeauianum, &c. Of Lælio-Cattleyas remarkable were a selection of the pretty L.-C. "Fascinator," one named King of Spain being a very finely-coloured variety. L.-C. "G. S. Ball" gave bright reddish orange colour; L.-C. Aphrodite, variety Princess Ena, was a showy crimson-purple lipped form, and L.-C. Haroldiana, luminosa, calistoglossa, Dominiana, and others in quantity exhibited various rich tints. In the front was a pan of several species of Anæctochilus, now seldom seen in such good condition, and others noted were the white and fragrant Brasso-Cattleya nivalis, the fine dark-coloured Odontoglossum maculatum auriferum, Masdevallia calura, and other Masdevallias, a fine specimen of Trichopilia crispa, a good Cœlogyne pandurata, with a spike of emerald-green flowers, with blackish markings on the lip, two good Cattleya Whytei, &c. All were well flowered, and the vigour of the plants was remarkable.

J. Rutherford, Esq., Beachwood, Blackburn (gr. Mr. Lupton), showed six white varieties of Cattleya Mossiæ.

Mr. J. Robson, Altrincham, staged a group of Odontoglossums, &c., in which were the finely-blotched O. crispum Mrs. F. Peeters, a singular, sparsely-blotched O. Lambeauianum, good O. Adrianæ; the dark, crimson-purple Cypripedium "The Sultan," resembling a fine C. William Lloyd; Oncidium Papilio, some early-flowered Cattleya Gaskelliana, C. Mossiæ, &c.

W. J. Caparne, Esq., Guernsey, sent about 80 cut flowers of varieties of Cattleya Mossiæ.

M. A. Peeters, Brussels, sent three good forms of his fine Odontoglossum Lambeauianum, the variety lucidum being a very handsome form, heavily marked with claret purple.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium barbatum "King of Spain," a very large form, with a fine dorsal sepal resembling that of C. Lawrenceanum; and the richly-coloured C. Lawrenceanum Hackbridgense.

Major G. L. Holford, C.I.E., C.V.O., Tetbury (gr. Mr. Alexander), showed finely-grown plants of Cattleya Mossiæ compacta and C. M. Countess Grey, both pretty varieties.

W. A. Bilney, Esq., Fir Grange, Weybridge (gr. Mr. Whitlock), sent Dendrobium Dalhousieanum luteum, with pale cream-yellow flowers, with a dark maroon blotch.

The Hon. Walter Rothschild, Tring Park (gr. Mr. A. Dye), showed Brasso-Catt.-Lælia Tring Park hybrid (L.-C. eximia Arnoldiana × B. Digbyana), a pretty, pale, rosy-lilac flower, with purple veining on the deeply-fringed lip.

Awards of Merit.

Phaius Doris (Cooksoniæ × Oakwoodiensis), from Norman C. Cookson, Esq. (gr. Mr. H. J. Chapman). A noble, light rose-coloured hybrid, with claret-coloured markings on its broad, openly-displayed labellum, which strongly indicates P. Humblotii, which was one of the parents of both the hybrids used in its production.

Masdevallia Harryana "Gatton Park variety," from Jeremiah Colman, Esq. (gr. Mr. W. P. Bound). Flowers large and of a brilliant, dark, reddish-scarlet colour.

Cattleya Mendeli "Mercury," from Messrs. Hugh Low & Co. A very handsome form of the C. M. Her Majesty class. Flowers large white, tinged with rosy lilac, the front of the broad, crimped lip magenta crimson.

Odontoglossum percultum "Orion" (Rolfeæ × ardentissimum), from M. Chas. Vuylsteke. A handsome and large flower, cream white, tinged with rose, with the inner parts of the segments marked with purple.

Odontoglossum ardentissimum "Venus," from M. Chas. Vuylsteke. A very handsome white variety, heavily and distinctly blotched with violet-purple.

Odontoglossum percultum "Juno," from M. Jules Hye de Crom. A model flower, cream-white, with a profusion of purplish-brown markings on the inner halves of the segments.

Cattleya Mossiæ Mrs. Jeremiah Colman, from Jeremiah Colman, Esq. (gr. Mr. W. P. Bound). A very distinct and fine flower of a bright rose-pink tint, the sides of the labellum white, with crimson markings in the centre. Lip large and finely crimped.

THE ROSES.

If we may judge from the remarks made by the visitors that reached the ear, Roses were exhibited in a fullness, as regards the hybrid Teas, pure Teas, Rambler, and polyantha sections, never exceeded at any show. The Queen of Flowers still remains the favourite with the general public, more especially the above-named sections.

The exhibits of Messrs. Ben J. Cant & Sons, The Old Rose Gardens, Colchester, were placed in a conspicuous position at the end of the Orchid bank, making a beautiful display with Ramblers, some of which were new; seedling Teas and Hybrid Teas shown in pots. Of Rambler roses new to commerce, much was made of Mrs. O. G. Orpen, a single-flowered variety, the flowers being about 4 inches in diameter, and of a light shade of pink. Others of this class were Blush Rambler, Leuchtstern, Mrs. F. W. Flight; and among double-flowered varieties, Crimson Rambler, Lady Gay, Dorothy Perkins, &c.

There were staged the double-flowered yellow Banksian, Austrian Briars, in copper and yellow-coloured varieties. Beautiful blooms were noted of Frau Karl Druschki, Papa Lambert, King Cole, Mad. Cadeau Ramey, Dean Hole, Hugh Dickson, and Gustave Grünerwald.

Messrs. W. Paul & Son, Waltham Cross, showed very extensively Ramblers in variety, including many of their own raising; these varieties and others forming the finest portion of the display, although as flowers they are not of much substance. Many of the specimens of these Ramblers measured from 6 to 9 feet in height and of proportionate breadth. We observed Waltham, of a bright rosy tint, and white centre; Hiawatha, a deep crimson, also white in the centre; Waltham Rambler, with immense bunches of light pink blooms; Lady Gay, profusely bloomed; Crimson Rambler and others. An old plant of Rose Madame Abel Chatenay, well flowered, was noted amongst those put up in the group Beneath these, dwarf pot Roses were arranged, of which mention may be made of the following choice varieties of H. P.'s, Teas, and Hybrid Teas, viz.: Dora (new), H. T., an immensely large flower of a tender pink shade, a very double flower; Madame Chas. de Luzy, a flower of the most delicate of flesh tints, with a suspicion of fawn on first opening, moderately double, and large; Grace Darling, very fine; Annie Williams, T., a good pillar or rafter rose, with pendulous blooms; Antoine Rivoire; Lé Progrés, H. T., of a pretty fawn tint; the bright-coloured D. R. Williamson, grandly flowered; Prince de Bulgarie, H. T., an exquisitely formed flower of the Niphetos form, in tint a tender flesh changing to white as regards the outer petals; Duchess of Albany, H. T., a fine bloom of a deep pink colour, which, before it is fully open, is of noisette shape; Frau K. Druschki; William Askew, a fine, closely-built, pink-coloured, H. T.; the delicately tinted Pharisäer, H. T.; the loosely-built but brilliant crimson-tinted Etoile de France, H. T.; Jean Ducher, Boadicea, Fisher Holmes, Madame Hosto, Marquise Litta, and other old favourites completed the display.

An equally large bank was shown by Mr. Chas. Turner, of The Royal Nurseries, Slough, the display being helped out by a number of Souvenir de la Malmaison and Tree Carnations. The rear part of the bank was largely made up of Rambler Roses in variety, blush crimson, pink, single and double-flowered varieties, interspersed with H. P.'s, T.'s, and H. T.'s in some diversity. Dwarf pot Roses—mostly new or comparatively modern introductions—occupied the front space. We observed examples of Mad. Cadeau Ramey, Etoile de France, Souvenir de Pierre Notting, Mrs. R. G. Sharman Crawford, Mrs. Edward Mawley, Dean Hole, Caroline Testout, Ulrich Brunner, Maman Cochet, and the light pink-tinted Edith Turner.

Messrs. W. Cutbush & Sons, Highgate and Barnet, were apportioned the corner of the large marquee at the southern end, in which they set up a gorgeous display of Rambler Roses, mostly tall plants embedded in moss and surrounded with dwarfer plants of the same varieties as the central plants. Among the Ramblers were Mrs. F. W. Flight and Turner's Crimson Rambler. The new dwarf Perpetual Polyantha Rose Mrs. W. H. Cutbush, with semi-double flowers of bright rose tint, and blooming whilst about 1 foot high, was shown.

Messrs. Paul & Son, The Old Nurseries, Cheshunt, N., were given the opposite corner of the marquee, which they filled with Roses in pots; dwarfs, standard, and Ramblers of large size, and considerable variety which were placed in the back line. The H. T. Madame E. Cocteau, occupied the central place, a standard with about a dozen flowers. The bloom is of large size, and fairly double in build until it ages. The tint is of a light shade of pink. Elise Fougier is a white Tea Rose of the build of Marechal Niel; Peace is another white-flowered Tea, of a more globular shape, but similarly drooping; George L. Paul, H. T., is a glowing purplish crimson, tolerably full, with buds of filbert shape; David Harum, H. T., is a flower with recurving petals, and a pleasing tint of rose. Other varieties noted were Frau K. Druschki, L'Innocence, H. T., Gustave Grunewald, H. T., Souvenir de Pierre Notting, Mad. Jenny Guillemot, Mildred Grant, Mad. Ravary, Betty (a very loose, large bloom of a rosy fawn tint), Spenser, Nellie Johnstone, T. (new) (of nice form, white, with a shade of pink in it), Richmond (a fine crimson, but possessing but few petals), and Mrs. A. Cheales.

Mr. G. Mount, the Rose Nurseries, Canterbury, was the exhibitor of a choice collection in the smaller tent, cut blooms and potted examples of Ramblers and Polyanthas in variety forming the chief features. Very fine blooms of the following varieties were observed: Capt. Hayward, Clio, Bessie Brown (extra good), Kaiserine Augusta Victoria, Mrs. John Laing, Mad. A. Chatenay, General Jacqueminot, Catherine Mermet, and Frau Karl Druschki, whose blooms were probably the best in the show. These were exhibited in perfection and considerable number. Mr. Mount's Roses were of such superior quality on this occasion that we believe he only narrowly missed winning the Veitchian Cup, awarded for the best exhibit in the show.

Messrs. H. Cannell & Sons, Swanley, Kent, made a fine display of the Rambler Dorothy Perkins, using the plants, which were trained fan-wise, as a background to an exhibit of Gloxinias and herbaceous Calceolarias.

FERNS.

There were only two groups, but each was of an imposing character; being limited to space, they were carried up as high as possible. There were two First Class Certificates given and one Award of Merit.

Mr. H. B. May, Upper Edmonton, filled the space allotted him to its utmost capacity. In the centre was a fine plant of Cibotium Schiedei, elevated nearly 20 feet; below this was a fine specimen of Polypodium Mayi, elevated plants of Nephrolepis davallioides furcans, and others. Polypodium Schneideri was good. A fine specimen of Drynaria quercifoliæ stood out prominently. Asplenium scandens, growing up a tree trunk, was a unique specimen. A large specimen of Polypodium congugatum stood out well. The pretty Pteris scaberula was seen in its best form. Platyceriums of the choicest sorts and Lomaria attenuata with brightly-tinted fronds, also Davallias, including the best varieties of the Fijiensis type, were well shown. A plant of Didymochlæna truncatula, with young fronds of a remarkably bright hue, was effective. Lygodiums in several varieties were in excellent condition. Adiantums included many of the choicest sorts. A. tetraphyllum, cardiochlæna, Nephrolepis Mayi, and congesta were interesting forms of this now popular class of Ferns. In Pteris the varieties Summersi and Childsi were seen in good form: if we could get these from spores and grow them in large quantities they would be among the most popular ferns we have, but, unfortunately, neither of them produce spores. Nephrolepis exaltata superba was honoured with a First Class Certificate. This is an improved form of one we had under the name of Westoni.

Messrs. J. HILL & SON, Lower Edmonton, put up an imposing group, the only fault being that it was rather crowded and many choice plants were not seen at their best. In the centre was a very fine specimen of Platycerium grande; the long drooping fertile fronds were well developed. Platycerium Veitchi and P. Hilli were also well shown. Large specimens of Gleichenia speluncæ, medullaris, dichotoma, and flabellata were in fine condition. In Adiantums, many choice varieties were shown. A. Veitchi was well coloured, also the pretty A. tinctum, A. curvatum, A. reniforme, A. assamicum, and the beautiful, though rarely seen, A. Hendersoni. In Pteris, P. nobilis was in beautiful form, also P. Mariesi and P. reginæ cristata. Davallias included the choice small-growing parvula and pedata, in fine condition, also P. Veitchi, P. Fijiensis elegans. P. Novæ-Zealanica, which we rarely see, was good. Others of the larger-growing sorts were also well shown. In Aspleniums, some good things were seen. A. marginatum gave a distinct shade of colour. A. squamulatum (of the Nidus type), with erect fronds with a bright deep green surface, growing nearly erect with fronds about 21 inches long and 2 inches broad. A large plant of Polypodium aureum giganteum was submitted for a Certificate, but failed to gain the distinction. It is, however, a useful variety for market work; the large fronds have a graceful, drooping habit, and, when young, are of a beautiful glaucous hue. The group included numerous other beautiful Ferns. Lomaria L. Herminieri and several others with tinted fronds gave colour to the group.

Messrs. SANDER & SONS, St. Albans, again showed a fine specimen of Polypodium Knightæ in a suspended basket; the long, drooping fronds being most effective.

GROUPS OF PLANTS.

Messrs. JAMES VEITCH & SONS, Ltd., King's Road, Chelsea, put up a grand group of foliage plants. A number of brilliant Anthuriums, including the beautiful Rose Laing, interspersed with showy Codiæums (Crotons), choice Ferns, handsome Dracænas, Anthuriums, Aralias, Marantas, Alocasias, with here and there a touch of colour provided by a flowering specimen of Blandfordia nobilis, Tillandsia zebrina, or Anthurium Scherzerianum. Nepenthes arranged on tall stands draped with Asparagus plumosus, and tall plants of Aralia elegantissima, etc., gave a pleasing relief to the group.

Messrs. VEITCH had also many new greenhouse plants in flower. Rehmannia angulata has been often described in these columns, also Lobelia tenuior, both of which were shown in good style. We also noticed a fine batch of Gerberas in many choice colours, Kalanchoe flammula, Schizanthus hybrids, Senecio auriculatissimus, etc.

Messrs. WM. BULL & SON, King's Road, Chelsea, showed choice stove and greenhouse foliage plants, including a magnificent specimen —5 feet or more tall—of Dracæna Victoria, the plant being "feathered" to the pot level, with its beautiful foliage; Caladiums, Codiæums (Crotons), Aralias, Pandanus, Tillandsia zebrina, and others of similar character. Sprays of the brilliant Bougainvillea Maud Chettleburgh, illustrated in our issue for November 12, 1904, were staged in the foreground.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, staged a collection of foliage plants, Codiæums (Crotons), Marantas, Aralias, Screw Pines, Caladiums, and others of equal beauty. A fine specimen of Anthurium Warocqueanum furnished a suitable centrepiece to the whole.

Messrs. SANDER & SONS, St. Albans, Herts, also showed a large specimen of the last-mentioned plant in a group of foliage plants. They had the new Cycas Micholitzii, a specimen plant of Polypodium Knightiæ elevated on a tall stand, a white variegated form of Asparagus Sprengeri, the handsome Furcraea Watsoniana, and other rare and new plants of equal beauty. A few flowering plants were included—Gloriosa Rothschildiana, Blandfordia nobilis, etc.

Sir ALEX. HENDERSON, Bart., Buscot Park, Berks (gr., Mr. Bastin), filled a considerable area with Codiæums (Crotons), interspersed with small Palms.

Messrs. SUTTON & SONS, Reading, furnished the eastern end of the big tent with an exhibit of much merit. A prominent bay of star Cinerarias occupied the centre, and on either side were two smaller bays. One was composed of Schizanthus—a mass of flowers—another consisted of Gloxinias of the choicest strain, and including such glorious things as Reading Scarlet, Her Majesty—the best white Gloxinia; Duchess, &c. Herbaceous Calceolarias and Streptocarpus formed the principal subjects of the remaining bays, but each was varied with other subjects, while separating each group were bands of tuberous-rooting Begonias, clumps of Nicotiana hybrids, and rows of Streptocarpus, with Ferns, Caladium Argyrites, Panicum, and other light and ornamental foliage plants as an edging to the whole.

Messrs. JAS. CARTER & Co., 237, High Holborn, London, made a bright display at the entrance to the long tent. They filled the right-hand corner with a bank of Begonias and Schizanthus, and around were masses of brilliantly-coloured Cinerarias, herbaceous Calceolarias, with small Ferns, Palms, etc., the whole making a veritable bower of flowers. On the centre table facing the entrance, Messrs. Carter staged a bank of Cinerarias, followed by others of Gloxinias, Schizanthus, and Sweet Peas.

Messrs. CLIBRANS, Altrincham and Manchester, showed a mixed group of foliage and flowering plants. They had a nice display of tuberous-rooting Begonias, Ficus Parcelli with Hydrangea-like foliage, the climbing Solly parvifolia with charming blue flowers, Codiæums (Crotons), and many other subjects.

Messrs. W. & J. BROWN, Stamford and Peterborough, showed a small collection of greenhouse plants, among which varieties of their Cactus-flowering Pelargoniums were prominent.

Messrs. HEATH & SON, Cheltenham, had a mixed group of greenhouse plants—Verbenas, show Pelargoniums, Carnations, Kalanchoe flammula, etc.

Mr. T. A. HUMMERSTON, Epping, Essex, showed plants of a new double rosy-pink Pelargonium named The Pride of Essex.

Mr. A. J. A. BRUCE, Chorlton-cum-Hardy, Manchester, is well known as a most successful grower of interesting insectivorous plants such as Sarracenias, Dionæas, Darlingtonias, Droseras, Pinguiculas, &c., of which plants he regularly exhibits a group at this important show. His display was quite up to the standard of previous years; indeed, Sarracenia flava and its varieties were finer than ever before exhibited by Mr. Bruce. A nice patch of Dionæa Muscipula was interesting as being shown in flower.

Messrs. KER & SON, Aigburth Nursery, Liverpool, showed 150 plants of Hippeastrums (Amaryllis), quite the finest and handsomest varieties in commerce. Jasper is small, but the colouring is unique, being cherry or cerise. The King is new. The flowers are large, the inflorescence having five "pips." The general culture and the excellence of the strain seen in this collection are deserving of much praise.

Messrs. GARRAWAY, Durdham, Clifton, Bristol, showed plants of a giant strain of Schizanthus.

Mr. WM. ICETON, Putney Park Lane, Putney, showed Lily of the Valley of remarkable size and purity arranged in a setting of foliage, and flowering plants such as Boronias, Liliums, Saxifraga pyramidalis, Astilbe (Spiræa), with Caladiums, Palms, etc.

Mr. T. JANNOCH, Dersingham, near Sandringham, furnished one end of the centre staging in the large tent with retarded plants of Lilac and clumps of Lily of the Valley.

Rhododendrons.—Messrs. JOHN WATERER & SONS, Ltd., Bagshot, Surrey, displayed a group of small pot plants of Rhododendrons. The group was interspersed with Japanese Maples, to furnish pleasing greenery. Pink Pearl was prominent, also the new White Pearl. Other handsome varieties were Kate Waterer, Mrs. Wm. Agnew, Duchess of Connaught, Mrs. Holford, etc.

Messrs. WM. PAUL & SON, Waltham Cross, Herts, showed trusses of Rhododendrons in baskets.

Messrs. R. & G. CUTHBERT, Southgate, Middlesex, showed Azaleas which appeared more beautiful than ever. The group was extensive, and was displayed in excellent taste in a central "bay" of the white Occidentalis and the yellow Anthony Koster—an excellent combination of colouring, with other banks at either end. This furnished one of the showiest groups in the large tent. The variety J. C. Van Thol is of a unique shade of red; the bunches of large, well-formed flowers at once attract attention. Other varieties worthy of mention are Il Tassa (small, semi-double flowers), Occidentalis, and Fairy Queen.

Gloxinias.—Messrs. H. CANNELL & SONS, Swanley, Kent, staged a batch of these plants in a setting of Maidenhair Fern, with a background of Rambler Roses. The plants were very floriferous, and embraced varieties of all colours from pure white to reds and blues, many being pleasingly spotted. A plant of the variety Sherlock Holmes was carrying two dozen flowers. Messrs. Cannell also displayed Cannas, among which were seen many new varieties. The new Frau E. Kracht is flesh coloured. West Grove is also new, darker in shade than the last-named. Another fine new variety is Konsul W. Vellnagee, a spotted flower, the ground being yellow, with scarlet spots.

Messrs. JOHN PEED & SON, Roupell Park Nurseries, West Norwood, staged a bank of Gloxinias set with Maidenhair Fern, and small Cocos Palms. The group sloped from the back and terminated in two raised clumps on either side of the foreground, the design being very pleasing. Many rich colours were present, and of these we may mention the beautiful shade of mauve seen in the variety Countess of Ilchester and the scarlet of King Edward VII.

Messrs. SUTTON & SON showed plants of their strain of Gloxinia, and some well-grown examples were seen in the floral group of Messrs. CARTER & Co., both of which are referred to above.

Mr. GEO. ARENDS, Ronsdorf, Germany, displayed forms of Primula obconica, with large flowers, with a wide range of colours.

Mr. W. ROBERT CHAPLIN, Waltham Cross, displayed single and double varieties of Petunias.

The firm of "LE LION," 122, Heyveld, Mont St. Amand, Gand, displayed a group of about 50 plants of market Palms, all of the species Cocos Weddeliana and the comparatively new Phœnix Rœbelini.

Messrs. CARTER PAGE & Co., 52 and 53, London Wall, showed vases of Cactus Dahlias, all well grown and brilliantly coloured, but out of season.

Clematis.—Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, had a batch of large flowering Clematis. The plants were not so severely trained as is sometimes done, but they lost none of their beauty from this fact. In the centre of the display was a fine plant of the claret-coloured C. Jackmanni rubra; near by was the large flowered Fairy Queen. Lady Northcliffe is new (the shade of lavender-blue being very pleasing). Other good things noticed were Lady C. Neville, Princess of Wales, Belle of Woking (double), and Ville de Lyon.

Messrs. RICHARD SMITH & Co., Worcester, put up a large batch of trained plants of Clematis, arranged without overcrowding, so that their full beauty was at once apparent. A number of small plants of Japanese Maples occupied the spaces between the pots, but they were not sufficiently tall to be obtrusive. The group was well balanced, the flowers not over-large, but all showed good culture. The new King Edward VII. was prominent. President has large flowers of deep heliotrope shade with light ribs—a very fine variety. A plant of Vriesia splendens was shown in flower, and a new double Tropæolum T. Smithianum. Pillar Roses and Acer Negundo furnished a suitable background.

Caladiums.—Messrs. John Laing & Sons, Forest Hill, showed a batch of Caladiums, not so large, perhaps, as is sometimes seen, but none the less beautiful, the colours being very finely developed. Flambeau has deep red in the centres of the leaves, which loses itself toward the margins in a deep green. Mad. Imbert Koechlin is of the palest yellow, approaching green, with a few red markings on the lamina. Baronne Albert de Rothschild is also a pale coloured variety. Bicolor sericeum resembles Flambeau, save that is much smaller in leaf. Colonel John Hay is new. The groundwork is reddish-pink, with a few paler maculations at intervals.

CARNATIONS.

One of the most gorgeous exhibits of Carnations was one shown by the President of the National Carnation Society, Martin R. Smith, Esq., Hayes, Kent (gr. Mr. Blick), and arranged in such a manner as to face the entrance to No. 4 tent. The group was a large one, and every flower was staked into a perfectly perpendicular and rigid position, the plants themselves being first-class representations of good cultivation. In general effect, the picture was one of pink colour in many shades, with a little yellow here and there over the surface. The yellow varieties were Cecilia, and a new border Carnation named Mrs. Will Fane, the latter being put up for certificate, but passed. A pure white border Carnation named Sir Galahad was also new, as were several others, but in the main the varieties were popular ones.

W. D. James, Esq., West Dean, Chichester (gr. Mr. W. H. Smith), made an exhibit of Carnation plants, each of which was the size of a large specimen. Some had about forty flowers upon them, and all were furnished with splendid foliage, such as is the surest indication of good culture. The varieties included Souvenir de la Malmaison, Princess of Wales, the new white border variety Mrs. Willie James, Cecilia, and others.

Mr. A. F. Dutton, The Nurseries, Iver, Bucks, at the opposite end of the same tent, put up one of his charming exhibits of cut blooms of tree Carnations. Such distinct and pure-coloured flowers as Xmas Eve, Enchantress, Fair Maid, and Harlowarden, etc., had a very excellent effect, arranged as they were in tall glasses of trumpet and other shapes.

Another group of cut Carnations was one shown by Mr. C. Engelmann, Horneybrook Nurseries, Saffron Walden, Essex. These were bunched with very long stems, and the flowers were of excellent quality, all being tree or border Carnations.

Messrs. Geo. Boyes & Co., Aylestone Nurseries, Leicester, had an exhibit of English-raised tree Carnation plants in flower, and, in addition, a few cut blooms, including two good varieties as follows: Victory, a yellow ground flower, edged and flaked with red, and Browning, a white flower marked sparingly with pale red.

Messrs. Hugh Low & Co., Bush Hill Park Nursery, Enfield, showed a collection of Carnations of excellent quality, about half being "tree" varieties, the remainder of the Souvenir de la Malmaison type. Two immense plants of "Malmaison" Princess of Wales were displayed, the one with 53 flowers and buds, the other with 49. The dark clove-coloured H. J. Jones was prominent; we may also mention the white Nell Gwynne and Duchess of Westminster.

Mr. Mortimer, Rowledge, Farnham, Surrey, had a row of pot plants of Carnations, and vases of cut blooms, with Asparagus Sprengeri intermingled, and an edging of Marechal Niel Roses. A very pleasing display of popular varieties.

The beautiful group of flowers staged by Messrs. Wm. Cutbush & Son, Highgate, London, N., in the big tent, was largely composed of Carnations. They had beautiful specimens of the Malmaisons Duchess of Westminster; Dragut (of their own raising), a grand scarlet-coloured variety; King Arthur, also brilliant scarlet, a very regular double flower, and smooth in form; Maggie Hodgson, deep crimson; Pride of Westbury, crimson and excellent in form; Trojan, white.

Mr. H. Elliott, Hassocks Nurseries, Hassocks. Sussex, had among other kinds of Carnations his new varieties H. Elliott, Elliott's Queen, England (a very bright scarlet flower), Snow, and Florence Wooller, all English-raised flowers of merit.

Other smaller displays of Carnations were shown by Mr. Chas. Turner, Slough, who worked them into his handsome group of Roses; Messrs. Heath & Son, Cheltenham; Messrs. Bath, Ltd., Wisbech, in whose group we noticed some grand specimens of Lieut. Peary—a pure white flower; Messrs. Bell & Sheldon, Castle Nursery, Guernsey, had a very pretty stand of popular varieties; and Mr. C. F. Waters, Balcombe, Sussex.

BEGONIAS.

Very excellent was the stand of Begonias staged by Messrs. Blackmore & Langdon, Twerton Hill Nursery, Bath. The flowers were all double varieties, and the beautiful shades of colours seen in this flower, combined with large size and excellence of shape, were well represented in this group. Francis is a new crenated variety of soft salmon-pink shade. Colonel Turner is a good crimson flower, large, and well balanced. Golden Eagle, Alice (new), Avalanche, and Millicent (new, a delicate salmon shade) were a few of the more notable varieties seen in this collection.

Adjoining this last-named exhibit was a stand of the same class of flowers shown by Messrs. Thos. S. Ware, Ltd., Ware's Nursery, Feltham, Middlesex. Here again were seen flowers of exceptional quality. We noticed the large Beatrice Mabbet (white, with pale yellow centre), Mrs. Moger (salmon), the charming white Mary Pope, Margaret Gwillim (a large crenated flower of deep yellow shade), Lady Coventry, Mad. Granby, etc.

Messrs. John Laing & Sons, Forest Hill, London, staged plants of tuberous-rooting Begonias, in many excellent colours—scarlets, whites, yellow, crimsons, reds, etc. Lady Gosford (salmon-pink), and Lady Chas. Beresford are two excellent double-flowered varieties.

A number of plants of a small flowering double Begonia with long growths was shown by G. J. Morris, Esq., Hendon (gr., Mr. A. Simmonds).

ALPINE AND OTHER HARDY PLANTS.

For present purposes we employ this very general and comprehensive term, more particularly in respect to the Alpine and herbaceous flowering plants. We would warn exhibitors of the danger of having too much of one thing, and urge them to show more originality. They show too much of the spirit of "follow my leader." We refer more especially to the duplication of little rockery exhibits, which are too frequently arranged with but small regard to the plants employed. There are exceptions, of course, and these are welcome.

Credit is due to Messrs. Cutbush & Son, Highgate, for their well-conceived rock and water garden out-of-doors.

Absolute novelties were rare; indeed, the only two plants receiving awards are very old garden acquaintances.

In the opening of the long tent near the entrance Messrs. Jas. Carter & Co., High Holborn, had a most attractive exhibit of Alpines on rockwork, a large number of showy and choice flowering plants being noted. Especially good was Saxifraga pyramidalis, with its snowy panicles of blossoms.

Messrs. Paul & Son, Old Nurseries, Cheshunt, on the opposite side of the tent, had a small arrangement of Alpines, with Pæonies, Flag Irises, Globe Flowers, and the like.

Very showy and good were the Poppies from Mr. H. J. Godfrey, Exmouth, Devon, such varieties as Matchless, Loveliness, and Winnie, the last with crimson flowers, being conspicuous.

The rockery exhibit from Messrs. Backhouse & Son, York, gave one unlimited pleasure, and its naturalness and conception testified to an intimate knowledge of the work. Here were seen crack and crevice occupied by plants in the most realistic manner, while the lower levels—mountain pastures, as it were—sparkled with many a bright Alpine gem. In this way we saw the vernal Gentian, the lovely Myosotis rupicola, many Orchises, and the like. Very pretty, too, were the Ramondias, Edraianthi, Trilliums, &c.; while the curious Iris paradoxa, Gerberas, and other things called for more than a passing glance.

Messrs. Bees, Ltd., Wapping Buildings, Liverpool, had an exhibit teeming with rare and choice plants; but the arrangement, and the endless array of paper strips with names robbed the group of some of its attraction. Silene acaulis was a lovely picture here. Other notable flowers included Lithospermum Gastoni, Ramondias, Conandron ramondioides, Iris gracilipes, the cob-web House Leeks, &c.

The Misses Hopkins, Mere, Cheshire, had a small exhibit, in which Globe Flowers, Lilies, Saxifraga Mac-nabiana, and many other species of this genus played a part. The pink-flowered Daisy Alice, and Primula sikkimensis were also noted in good flowering plants.

The hardy perennials and Lilies from Messrs. Wallace & Co., Colchester, constituted a valuable feature, not merely as a striking exhibit as a whole, but in the style and arrangement of the many pot-grown plants the group was more than ordinarily instructive. There were not such masses of meaningless cut flowers. The general arrangement was excellent, and we emphasise the point by reason of their importance to those desiring to learn. The Lilies in the group formed quite a feast of these flowers alone, and we noted fine displays of L. excelsum, L. Hansoni, L. Martagon, and its variety album, with small, gracefully recurving blossoms, the lovely L. rubellum, L. venustum, L. longiflorum superbum, and others, each kind well displayed and in goodly numbers. We were distinctly pleased with the light, elegant forms of the Ixias, the airy and natural grace of Heucheras and Columbines, and with the unique beauty of the lovely Calochortus, to name but a few of the stronger items in the group. Then, in addition, came a blaze of the crimson Oriental Poppy, just such a colony as one might wish for in the garden on a summer day; the all too rarely seen Brodiea coccinea, with its scarlet-green-tipped Correa-like blossoms, on stems 2½ feet high; and there were many other things equally worthy of note. Continuing round the opposite side of the table a rockery had been arranged, and here were seen many of the more showy Alpine plants and other plants, as Cypripediums, Fritillaria kamschatkensis, Ramondias, Gentiana verna, and many besides.

Mr. Amos Perry, Winchmore Hill, contributed a big bank of the more showy perennials, in which such items as Globe Flowers, Camassias, Lilium auratum, L. longiflorum, L. speciosum in variety, many fine masses of Geums, G. Heldreichi for example, Eremuri, Incarvilleas, and others were strong and boldly shown. The new Phlox P. canadensis Laphami, Perry's variety, was quite a feature, and here, as in the open air, the plants were a mass of blossoms. Very striking were the towering inflorescences of Rheum palmatum tanguticum atrosanguineum, the many flowers of the Iris Susiana, I. Korolkowi, &c., and, with many smaller groups in the foreground, with water-Lilies, made a goodly display.

The Anemones from Messrs. Reamsbottom & Co., Alderborough, Kings Co., Ireland, were showy and good as usual, embracing much colour variety.

Messrs. Geo. Bunyard & Co., Maidstone, had a showy group of hardy perennials, in which such things as Globe Flowers, Eremuri, Phlox canadensis, Pyrethrums, very fine Lupins, Ixias, Saxifraga Mac-nabiana, Irises, and many others were freely introduced.

Messrs. Bakers, Wolverhampton and Codsall, had a central rockery exhibit with Pansies and other things at right and left. Saxifragas, Aubrietias, Gentians, Primula rosea, P. involucrata, Ourisia coccinea, Androsace chumbyi, very charming, Trilliums, &c., were freely employed.

Messrs. H. & A. Trower, Redhill, Surrey, had a large group of Spanish Iris, Lily of the Valley, Eremuri, &c.

Mr. Maurice Prichard, Christchurch, Hants, had groups in three places, one devoted to Alpines on rockwork, another of the bolder perennials, and a third of the lovely Anchusa italica "Dropmore variety." In the perennials Eremurus Elwesianus was especially fine and vigorous.

Messrs. Clibrans, Altrincham, had a large display of Aubrietias in variety, and Mr. Wm. Sydenham, Tamworth, in addition to Pansies and Violas, had many hardy flowers in the cut state.

Messrs. Barr & Sons, Covent Garden, London, were not this year in their old-time place, but on the opposite side of the tent, and, as usual, had an extensive exhibit of all hardy seasonable flowers. For example, in company with the latest Tulips, there were the early Gladioli, lovely masses of Spanish Irises, Trilliums, Orchises, Ramondias, Gentians, Lupins, Iris Susiana, Heucheras in variety, and a host beside. Bamboos, Acers, and other important subjects materially assisted to a very excellent display, into which much thought and tasteful arrangement had entered.

Mr. B. Ladhams, Southampton, had a fine display, chiefly of cut flowers, and here we were especially impressed with a fine mass of Aquilegia Stuarti, Ladhams' variety, in which the broader, longer sepals are quite a feature. Perpetual flowering Pinks in pots were distinctly good and pleasing. With these a large array of other plants were shown.

Mr. E. Poupart, Twickenham, had a fine lot of the Victoria strain of Lily of the Valley, the spikes very strong and good.

Mr. R. C. Notcutt, Woodbridge, Suffolk, had a large bank of the more showy perennials, Poppies, Tulips, Irises, Pyrethrums, and the like; while a similar lot in much greater variety came from Messrs. G. & A. Clark, Dover. The latter firm, in another position, set up a rockery exhibit.

The rockery exhibit from Mr. H. C. Pulham, Elsenham, was nicely arranged, and a large number of choice plants were employed judiciously. Armeria Laucheana was most charming, as were Myosotis rupicola, Cypripediums, the rose and white Alpine Asters, Saxifraga longifolia, and others.

The Guildford Hardy Plant Nursery (Mr. A. R. Upton) was responsible for a very charming collection of rock plants and small shrubs suitable therefor, and we noted with pleasure some exquisite bits of colour here, as, *e.g.*, Haberlea rhodopensis, a lovely mass of scarlet Owrisia, the very beautiful Oxalis ermcaphylla, with white cups and glaucus leafage, the Edelweiss, Cob-web House Leeks, a rich carpet of the vernal Gentian, &c.—a most pleasing exhibit.

Mr. G. Reuthe, Keston, Kent, likewise had a choice exhibit, into which many of the rare or choice Saxifragas were shown freely. Cypripedium macranthum, Iris cristata, Arenaria purpurascens, the black Fritillary, Onosmataurica, Aquilegia glandulosa were among notable things. A large array of Tulips came from the same source.

Messrs. R. Smith & Co., Worcester, had an exhibits of Irises, Pæonies, Eremuri, &c.

Messrs. J. Cheal & Sons, Crawley, had a bold rockery exhibit, with many covering Alpines and shrubs.

From the Craven Nursery, Clapham, Lancaster, Mr. A. Farrer brought many of the choicest Alpines seen at the Temple Show this year, and we have never in thirty years seen anything to approach the Daphne rupestris (see Awards) for choice or exquisite colouring. Edraianthus serpyllifolius covering a slope with violet cups, the vernal Gentian naturally forming its own turf, as it were, Geum reptans, golden, white, and coloured Ramondias, Androsaces in plenty, Arisarum proboscideum, with curiously hooded spathes, Saxifraga aizoon rosea, S. a. lutea, S. a. flavescens, these are a few of the gems of which words are inadequate to convey an impression of their beauty. Tiarella superba—we presume a form of T. cordifolia—was also seen for the first time; but we think there is greater beauty in this plant if allowed to come quite naturally in the open. We are impressed with its value as a flowering subject.

Messrs. Geo. Jackman & Sons, Woking, also contributed their quota to the hardy Alpine exhibits, and a nicely-arranged group was the result, many plants already noted being admirably shown.

St. Brigid Anemones in the cut state came from Mr. N. Lowis, Bridgwater.

SOME CUT FLOWERS.

The displays of cut flowers, apart from the Carnations and Roses noted elsewhere, comprised Tulips, Sweet Peas, Pansies, etc. The Sweet Peas are at this season fresh with us. The group of these flowers shown by Mr. R. Sydenham, Tenby Street, Birmingham, was very prettily arranged, and included such finely-coloured varieties as Coccinea, Salopian, Miss Willmott, Gorgeous, and the blue-flowered Nero, Countess Radnor, and the Lady Grisel Hamilton. From Mr. Henry Eckford, Wem, Salop, came a large and representative gathering of Sweet Peas, all very pleasing and good. Mr. H. J. Jones, Lewisham, had a fine display of Sweet Peas, and an equally good display of double and single Zonal Pelargoniums. Among the latter we may select Maid of Honour (salmon), St. Cecilia (salmon-scarlet), and Alfred Tennyson (rich scarlet), as especially noteworthy. Fire Dragon is of the cactus-petalled type. Messrs. Dobbie & Co., Rothesay, well maintained their reputation for Sweet Peas, Pansies, and Violas, and in each case the flowers were admirably staged and in great variety. Many pretty Columbines were also noted. Messrs. Watkins & Simpson, Tavistock Street, Covent Garden, W.C., had a beautiful collection of Sweet Peas, some of the varieties, such as Frank Dolly (blue), Flora Norton (blue), Evelyn Byatt (rose-scarlet), being exceptionally fine. From Messrs. Alex. Dickson & Son, Royal Avenue, Belfast, came a varied assortment of Tulips, in which Cottage, Darwin and English kinds were seen to advantage. Messrs. Barr & Sons, King Street, Covent Garden, made a fine display with Darwin and other Tulips. Messrs. Wm. Bull & Sons, Chelsea, staged a nice batch of the ten-week Stock "White Excelsior." Messrs. B. S. Williams, Holloway, contributed a display of Tulips, Anemones, Columbines, Pæonies, Gladiolus, Poppies, Scillas, and similar flowers. Messrs. Gilbert & Son, Bourne, Lincolnshire, set up a display of Anemones, including the rich King of Scarlets. Mr. V. Slade, Taunton, Somerset, had a group of cut flowers of single and double Zonal Pelargoniums. Messrs. Hogg & Robertson, St. Mary Street, Dublin, contributed a good display of Tulips and Ranunculus, the former being strongly represented in Darwin kinds. Messrs. G. Stark & Son, Great Ryburgh, Norfolk, had Sweet Peas in many good varieties. Messrs. Alex. M. Wilson, Spilsby, Lincs., had a large display of Cottage and Darwin Tulips, the flowers of Scarlet Beauty being exceptionally fine for so late a date. Mr. Howard Crane, Highgate, staged Violas, cut flowers in sprays, and growing examples in pans, that furnished a good idea of their garden value. Messrs. Baker's, Wolverhampton, contributed a pleasing bank of Zonal and other Pelargoniums, Pansies, etc. Messrs. R. H. Bath, Wisbech, had Tulips and Sweet Peas in great variety; another exhibitor of these last-named flowers was Mr. C. W. Breadmore, Winchester.

EXHIBITS ARRANGED OUT-OF-DOORS.

Messrs. J. Veitch & Sons, Ltd., Chelsea, exhibited a number of most interesting introductions from China, viz., Meconopsis integrifolia, with hairy grey foliage and globular canary-yellow flowers; M. punicea, with crimson flowers; Primula pulverulenta, well bloomed and showy in colour of flowers; P. orbicularis, having primrose-yellow flowers supported on tall stalks; P. deflexa, with vivid blue-coloured flowers; P. sibirica, having lilac-coloured flowers; P. Veitchi, with bright purple-coloured flowers in fair-sized corymbs; P. Cockburniana (orange-scarlet); Cypripedium tibeticum (see fig. 139); Androsace Henryi; Pæony Duchesse de Nemours; and some grand spikes of Eremurus robustus Elwesianus.

Mr. L. R. Russell, Richmond Nurseries, Richmond, Surrey, constructed a pretty arrangement with hardy materials. The idea was a half moon-shaped area of tall trees growing in pots, consisting of Acers from Japan, and others with pictural foliage, Olearia stellulata, purple-leaved Beech, Hazel, Peach Prunus, variegated Elder, Dimorphanthus Mandschuricus albo-marginatus, Ulmus punctata argentea-variegata; U. virginalis variegata, Ceanothus Gloire de Versailles, C. Veitchianus. Little groups of Cytisus (Genista) hispanica, Rambler Roses, and a row of Clematis in variety gave relief to the arrangement.

Messrs. W. Cutbush & Son, in an extensive rockwork, managed to display effectively and naturally a large number of Alpine and rock plants. There were masses of Orange Globe Trollius, Iris lævigata, Cypripedium spectabile, Spiræa palmata, and other species, Orchis foliosa and other hardy Orchids, Ramondias, Primula japonica splendens, Funkia japonica, Ferns of diverse kinds, Gunnera, Sarracenias, Lilies, and a quantity of miscellaneous flowering plants; in fact, an excess of this kind of material. A pond with water Lilies and other aquatics gave the needed realism to this stage scenery, which was carried out on a large scale and with excellent effect.

Mr. M. Prichard, The Nursery, Christchurch, exhibited about 12 plants of Anchusa italica "Dropmore variety," which made a striking display with its bright blue flowers. The plants measured 5 to 6 feet in height.

Messrs. Fisher, Son, & Sibray, Royal Nurseries, Sheffield, had a large exhibit of pictural trees in capital growth and condition, such as they have sent to this show for several years past, the Concordia Oaks, Japanese Maples, pyramidal-trained Hollies, and many other choice trees and shrubs being very noticeable.

Messrs. J. Waterer & Son, Ltd., nurserymen, Bagshot, Surrey, had a showy exhibit of Kalmia latifolia, Pink Pearl, and Frederick Waterer Rhododendrons; and a large quantity of evergreen trees and shrubs, Japanese Acers, and plants having variegated leaves.

Mr. David Russell, Essex Nurseries, Brentwood, exhibited largely trees and shrubs having variegated foliage; hardy Azaleas, Clematises, Lilacs, &c.

Of the same miscellaneous character, but with more colour in it, was an exhibit from Messrs. J. Cheal & Sons, nurserymen, Crawley, Sussex. Pictural trees were the prevailing feature, and the floral colour was afforded by Rhododendrons, Azalea pontica, A. mollis, Viburnum plicatum, and Cytisus of species.

Messrs. T. Cripps & Son, Tunbridge Wells, exhibited large numbers of Japanese Acers in great variety, and variegated, and abnormal forms of other species of trees.

Topiary objects were, as usual, shown largely by Messrs. W. Cutbush & Son, Highgate and Barnet.

Messrs. R. Smith & Co., Worcester, had a choice collection of Conifers, Acers, and Azaleas. Of the first-named, we noted examples of Tsuga Hookeriana, Picea pungens glauca, Picea Remontii, Pseudolarix Fortunei, Thuja gigantea aurea, and Cedrus atlantica glauca.

Messrs. Barr & Sons, King Street, Covent Garden, made a nice show with these marvellous objects of eastern art, miniature trees of great age, and we noted that they had an unusually healthy appearance.

Messrs. W. Fromow & Sons exhibited Japanese Maples almost exclusively, the collection being a representative one.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, had an exhibit of Metrosideros floribunda, the plants being most abundantly furnished with their bottle brush-like spikes of crimson flowers, recalling old times.

Messrs. Carter & Co., High Holborn, London, exhibited pigmy trees, &c., from Japan, and among them an Oak reputed to be 250 years old.

Floral Committee.

AWARDS.

Hippeastrum Jasper.—This was one of the varieties in Messrs. Ker & Sons' exhibit that represented new shades of rose and pink colours. "Jasper" may be described as purplish rose, the centre of each segment towards the base being of brilliant red. There was no trace of green or any other colour, and the flower was of good form, the segments being imbricated and reflexed. (Award of Merit.)

Hippeastrum Rose Madder.—This variety we considered to be the best of the many distinct Hippeastrums shown by Messrs. Ker & Sons, Aigburth, Liverpool. It was also recommended an Award of Merit by the unanimous vote of the Floral Committee. The form of the flower with the very broad, much-reflexed perianth segments is well shown in the sketch made at the exhibition by Mr. Worthington Smith, and reproduced at Fig. 345. We need only say further that the flower was about 7 inches across, and of a rich rose colour, with brilliant red at the base of each segment, and a trace of faint green colour at the base of the stamens.

Begonia, Alice.—A fine double flower of good form, and pale buff colour, with rose edgings to the petals. One of the best of the "Picotee" type. (Award of Merit.)

B. Mrs. J. B. Blackmore.—A double variety of clear rose colour, with wavy petals. (Award of Merit.)

B. Millicent.—A double flower of rose-like form, and of salmon-pink colouring. (Award of Merit.) The three tuberous-rooted Begonias described above were shown by Messrs. Blackmore & Langdon.

Hardy Rhododendron Marchioness of Tweedale.—The flowers are of rose colour, except the uppermost segment, which is whitish, with yellow spotting. Shown by Messrs. J. Waterer & Sons, Ltd., Bagshot. (Award of Merit.)

Clematis Lady Northcliffe.—This variety has large flowers of exquisite form, and of lavender blue colour, but paler near the ribbing along the centre of each segment. Shown by Messrs. Geo. Jackman & Sons, Woking. (Award of Merit.)

Carnation Mrs. Willie James.—This new white Carnation, which has been raised at West Dean Gardens, Chichester, is a border variety. It is very free in flowering, has a vigorous habit, and produces large, full flowers that are pure white and slightly fragrant. The calyx occasionally bursts, owing to the fullness of the flowers, but the variety is one that may be recommended to the notice of every Carnation grower. Shown by W. D. James, Esq., West Dean Park, Chichester (gr. Mr. W. H. Smith). (Award of Merit.)

Rose Hiawatha.—A climbing Rose of very strong growing habit, the long growths developing cylindrical trusses of rosy crimson single flowers, each with a white centre that is more or less hidden in the younger flowers by the cluster of yellow stamens. Shown by Messrs. F. Cant & Co., Colchester; Hobbies, Ltd., Dereham; and Wm. Paul & Son, Waltham Cross. (Award of Merit.)

Rose Kathleen.—This is another climbing single Rose, although not quite so strong in growth as the last-named, it is equally floriferous. The colour of the flowers is much lighter than that of Hiawatha, a shade of rose-pink, but it has the same white centre, and setting of yellow stamens. The trusses are fragrant, and remain on the plant for a great length of time. Shown by Messrs. Wm. Paul & Son, Waltham Cross. (Award of Merit.)

Acrostichum decoratum.—A Fern somewhat resembling A. crinitum, but with smaller fronds which have a bright green surface, and a margin of brown woolly scales; the crown and stipes are densely covered with brown scales. Shown by Messrs. J. Hill & Sons. (Award of Merit.)

Vitis Henryana.—This species was discovered by Dr. Henry in China, where it is a native of Hupeh and Ichang. It was introduced to Messrs. Veitch's nursery by Mr. E. H. Wilson. In appearance it is very much like the old Virginian creeper, but the nerves in the centre of each leaflet are marked by a puberulous silvery band, which are very effective. The colour of the young leaves is brilliant, translucent scarlet, passing as the leaves get older into rich carmine, and ultimately into ruddy bronze, with the silvery markings before mentioned. Shown by Hobbies, Ltd. (Award of Merit.)

Nephrolepis exaltata superba.—This fine variety, which had previously been awarded an Award of Merit, was now recommended a First Class Certificate, being shown in excellent condition by Mr. H. B. May.

Nephrolepis exaltata elegantissima.—This is of American origin and somewhat resembles N. Piersoni, but has looser and more elegant fronds; the lateral pinnæ spread out and again subdivided, the sub-divisions being again cut down into narrow segments. A First Class Certificate was given for this. Mr. W. J. Godfrey, Exmouth Nurseries, who exhibited a fine specimen, had also Nephrolepis Scottii, another American variety of the exaltata type, but with shorter fronds, which are of a leathery texture.

Daphne rupestris [*syn D. petræa.*]—An exquisitely coloured rock shrub or dwarf evergreen from the Tyrol. By no means a novelty, but exceedingly rare in cultivation. We have never before seen the plant in such beauty, the rich rose colour of the pretty mass of blossoms defying description. The plant is not more than 3 inches high, the blossoms at flowering time quite covering the whole plant, so that leaves are only occasionally seen. From The Craven Nursery, Clapham, Lancaster. (Award of Merit.)

Gladiolus, Ne Plus Ultra.—The reason for the Floral committee recognising this very old, and by no means rare plant was not apparent. It is, we believe, a variety of G. ramosus, and coloured a crimson scarlet, each of the lower segments of the flower having an oblong and much pointed white blotch running through its central part. The variety is showy and worthy of cultivation, the arching spikes of 2½ feet high being very attractive. From Messrs. Wallace & Co., Kilnfield Gardens, Colchester. (Award of Merit.)

FRUIT TREES.

The sole exhibitors of these were Messrs. Rivers & Sons, Sawbridgeworth, who had a group of thirty-five trees in pots, including eight Peaches, twenty Nectarines, and seven Cherries. The pots varied in diameter from 12 to 16 inches. The trees are re-potted each year, the roots being hard pruned. The average crop on Peach and Nectarine trees was eighteen fruits, the varieties being Peach Duke of York, the product of crossing Alexander Peach with Early Rivers Nectarine; and Nectarine Cardinal, now

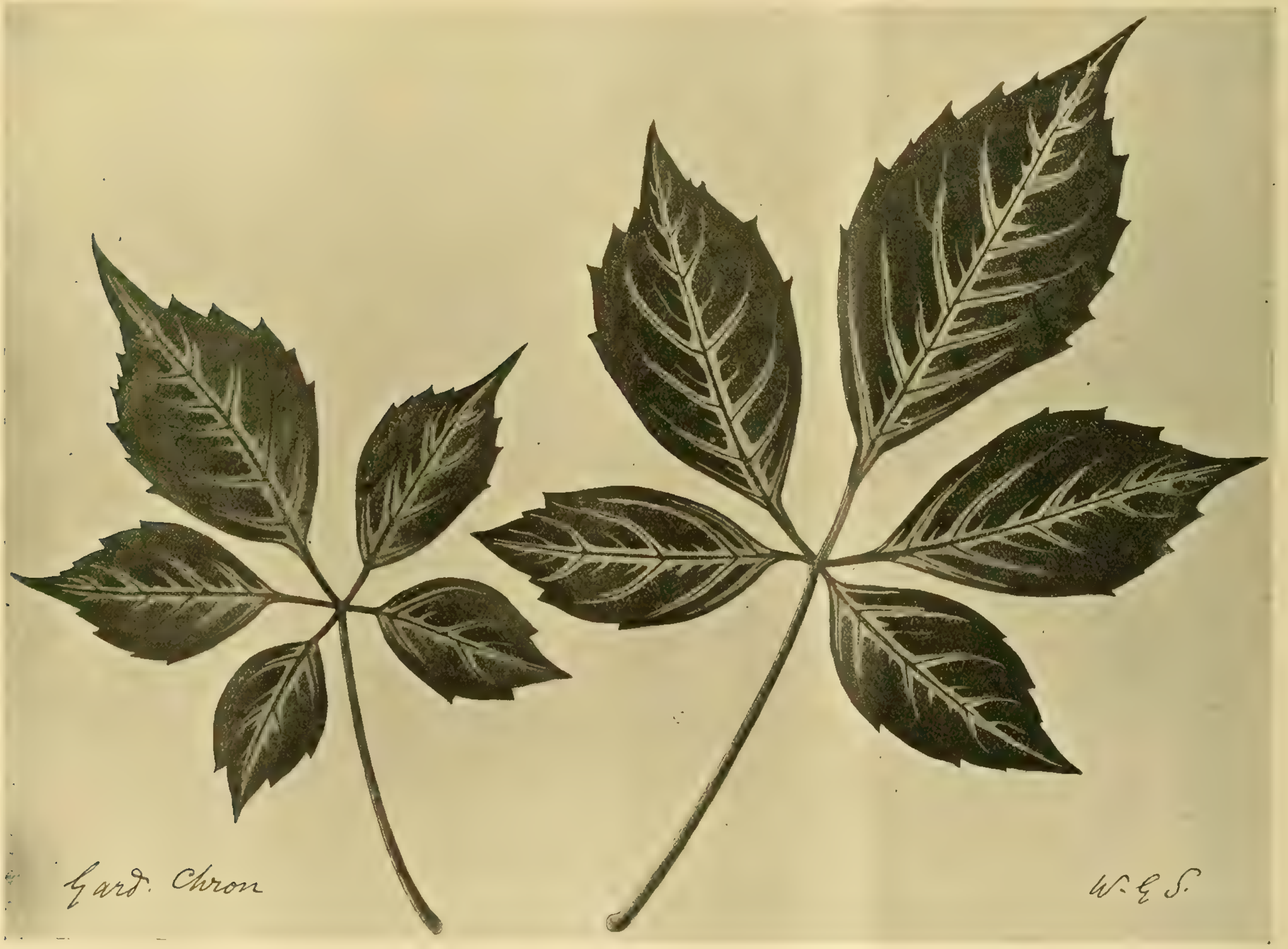


Fig. 143.—VITIS HENRYANA: LEAVES RICHLY COLOURED, WITH CENTRAL WHITISH STRIPES.
(Given an Award of Merit at the Temple Show.)

so well known as the earliest variety of Nectarine in cultivation. As evidence of the precocity of the Peach, a yearling plant carried three fine ripe fruits. Baskets of fruits of Cardinal Nectarine were also staged. The Cherries, all freely fruited, were of the variety May Duke.

COLLECTIONS OF FRUIT.

The most considerable and finest collection was that sent by Sir W. G. Pearce, Bart., Chilton Lodge, Hungerford (gr. Mr. Charles Beckett). This included on tall stands superb Ringleader, Royal Jubilee, Superlative, Countess, Hero of Lockinge, and other Melons; Grapes, Foster's Seedling, six bunches; Buckland Sweetwater, three bunches; and Black Hamburgh, five bunches. Also, in dishes, Brown Turkey and White Marseilles Figs; Waterloo and Hale's Early Peaches; Cardinal and Early Rivers Nectarines; Strawberries in variety, making in all some fifty dishes.

From Bearwood, Wokingham, the residence of A. F. Walter, Esq. (gr. Mr. W. Barnes), came a smaller but superb exhibit of Hero of Lockinge Melons; also Frogmore Scarlet, Sutton's Kingleader, Best of All, and others, all very fine fruits. There were also several dishes of that capital late Apple Annie Elizabeth, richly coloured and handsome.

Messrs. Laxton Bros., Bedford, showed some fifty plants in 6-inch pots of their fine new Strawberry Bedford Champion, the fruits being of large size, rounded, clear, and of a bright scarlet colour; also several large baskets of picked fruits. There were also twenty-five similar plants of a new Strawberry named Reward, deeper than the other in colour and rather broader in form. Both varieties were evidently heavy croppers.

Mr. J. T. D. Whitaker, Bentham, Yorkshire, had a few plants in pots of a Strawberry named Archroyal. If a good variety, the exhibit did it material injustice.

Messrs. J. F. Chatfield, Southwick, sent six plates of very fine fruits of Royal Sovereign Strawberries, the fruits, however, being rather flatter than usual with this variety.

From Mr. Byron, Gayford, Worthing, came numerous bunches of Grapes on stands and in baskets, the chief being apparently Muscat of Alexandria (somewhat green), and one basket of Black Hamburgh. Also Cucumber Telegraph and an unnamed Tomato.

Messrs. G. Bunyard & Co., Maidstone, set up a wonderfully fresh collection of some eighty dishes of Apples and a few baking Pears, with three trees in pots of May Duke Cherry in fine fruit. Amongst the excellent Apples were Lord Derby, Lane's Prince Albert, Ontario, King of Tompkins County, Annie Elizabeth, Mère de ménage, Alfriston, Reinette Superfin, Belle du Bois, Hormead's Pearmain, Bismarck, Grange's Pearmain, Winter Queening, Prince Alfred, Barnack Beauty, Ben Davis, Belle Pontoise, and Paroquet.

VEGETABLES.

A very remarkable display of forced vegetables, covering 100 square feet of tabling, but even then somewhat thickly placed, was that from Welbeck Abbey, Worksop, staged by the Duke of Portland (gr., Mr. J. Gibson). The number of diverse dishes was 103, and included for background, clusters of Lettuces, Earliest of All, Ideal, Golden Marvel, Golden Ball, and others; Cabbages Tender and True, April, Flower of Spring, Little Gem, and Sutton's Earliest; Turnips, Red and White Milan; Carrots, Long and Turnip Rooted, Bell's Champion, Early Gem, and Intermediate; and in front, Celeries White Gem and A1; Vegetable Marrows Perfection, Moore's Cream, and Pen-y-bid; Cucumbers Prize-winner and Delicacy; Peas Early Giant, Duke of Albany, Ideal, and Excelsior; numerous Potatos, Tomatos, Radishes, Dwarf Beans, Mushrooms, and other products.

Messrs. Sutton & Sons, Reading, set up a very interesting collection of Cabbage Lettuce in great variety, some of the best being Satisfaction, Standwell, Heartwell, Ideal, Golden Ball, Earliest of All, and Commodore Nutt. Also a collection of Potatos grown in frames, including forty-two varieties early and late kinds; of these were May Queen (well named), Ringleader, Epicure, Harbinger, Sir J. Llewellyn, Superlative, Beauty of Hebron, and Satisfaction.

Mr. S. Mortimer, Farnham, had a very effective collection of Tomatos, his background including numerous fruiting stems of Carter's Sunrise, and several dishes of it; also boxes and dishes of Winter Beauty, Hanwell Victory, Sutton's Satisfaction, A1, Victoria, and others; also boxes of Cucumbers Telegraph and Sutton's Matchless, fruits of this last-named variety being very handsome.

Superb examples of Asparagus in large bundles came from Mr. Harwood, Colchester, and Mr. Stephenson, Burwell, Cambridge.

Mr. Montmorency, Carrickmines, Ireland, sent three dishes of forced Potatos.

Distinctly interesting were the collections sent by the several horticultural colleges.

From the Reading College (Mr. C. Foster, head gardener) came clusters of Tomatos in great variety; also fine bunches of Carrots. He had a striking centre of Magnum Bonum Cauliflower, flanked by baskets of Holmes' Supreme, Sunbeam, Satisfaction, and other Tomatos; Superb Early Giant and Duke of Albany Peas; various Cucumbers, Cauliflowers, and other products, including a very fine Asparagus showing wonderful growth, being from plants of but three years old. Also a fine basket of Royal Sovereign Strawberry.

From the Horticultural College, Swanley, Kent (head gardener, Mr. Lawson), were staged several varieties of Vegetable Marrows, Model and Rochford's Cucumbers, various Potatos, Tomatos, and Lettuces.

The Lady Warwick College, Studley Castle (Warden, Miss Faithfull), sent numerous plants in pots and in fruit of the Red Currant Tomato, dishes of Cauliflowers, Broccolis, Cabbages, Cucumbers, Tomatos, Lettuces, Peas, and Dwarf Beans—in all about forty dishes.

Awards made by the Council.

Veitchian Cup.

Messrs. Sander, St. Albans, for Orchids and New and Rare Plants.

Gold Medals.

Jas. Veitch & Sons, Ltd., for New Chinese Plants, Stove and Greenhouse Plants; His Grace the Duke of Portland, for Vegetables; Jeremiah Colman, Esq., for Orchids; Fisher, Son & Sibray, Ltd., for Trees and Shrubs; W. Cutbush & Sons, for Rockwork, etc.; F. Sander & Sons, for Orchids, etc.; Sutton & Sons, for Greenhouse Plants and Vegetables; R. Wallace & Co., for Lilies, Herbaceous and Aquatics; R. P. Ker & Sons, for Hippeastrums; Charlesworth & Co., for Orchids; Mr. Geo. Mount, for Roses; W. Paul & Son, for Roses.

Silver Cups.

Sir W. G. Pearce, Bart., for Fruit; W. James, Esq., for Carnations; Martin Smith, Esq., for Carnations; Sir F. Wigan, for Orchids; A. F. Walter, Esq., for Fruit; Cuthbert & Co., for Hardy Azaleas; Rd. Smith & Co., for Clematis; Carter & Co., for Flowering Plants; J. Waterer & Sons, for Rhododendrons; Barr & Sons, for Herbaceous Plants, etc.; Mr. L. R. Russell, for Hardy Trees, etc.; Cheal & Co., for Hardy Trees, etc.; Hugh Low & Co., for Flowering Plants, etc.; G. Bunyard & Co., for Apples and Herbaceous Plants; Mr. M. Prichard, for Herbaceous and Alpine Plants; Rivers & Sons, for Fruit Trees in Pots; Cannell & Sons, for Cannas, etc.; Blackmore & Langdon, for Begonias; Mr. Amos Perry, for Herbaceous Plants; Bakers, for Herbaceous Plants; Paul & Son, for Roses; Cripps & Sons, for Hardy Maples and Shrubs; Mr. H. B. May, for Ferns and Flowering Plants; Mr. Frank Cant, for Roses; Mr. D. Russell, for Hardy Trees and Shrubs.

Silver-gilt Flora Medal.

T. S. Ware & Co., for Begonias and Carnations; Jackman & Sons, for Clematis, etc.; Dobbie & Co., for Violas, etc.; Fromow & Sons, for Hardy Maples; Mr. C. Turner, for Roses and Carnations; W. Bull & Sons, for Foliage Plants and Orchids; Mr. A. J. A. Bruce, for Sarracenias, etc.; "Le Lion" Firm, for Palms; J. Backhouse & Son, for Rock Plants; Hill & Son, for Ferns; Mr. C. Engelmann, for Carnations; Mr. Arends, for Primula obconica; Lord Rothschild, for Carnations,; Mr. R. J. Farrer, for Alpines; J. Cypher & Sons, for Orchids; Mr. G. Reuthe, for Herbaceous Plants, etc.; Mr. H. C. Pulham, for Rock Plants.

Silver-gilt Knightian Medal.

Reading College, for Vegetables.

Silver-gilt Banksian Medal.

Mr. S. Mortimer, for Cucumbers, etc.; Hogg & Robertson, for Tulips; Mr. R. C. Notcutt, for Herbaceous Plants; Hobbies, Ltd., for Roses; Mr. A. F. Dutton, for Carnations.

Lindley Medal.

Mr. C. Vuylsteke, for Orchids.

Silver Knightian Medal.

J. & F. Chatfield, for Strawberries; R. Stephenson, Esq., for Asparagus.

Silver Flora Medal.

J. Laing & Sons, for Caladiums, etc.; H. Eckford & Sons, for Sweet Peas; Sir A. Henderson, Bart., for Greenhouse Plants; Bath, Ltd., for Tulips, etc.; Mr. W. J. Godfrey, for Poppies, etc.; Guildford Hardy Plant Nursery Co., for Rock Plants; B. Ladhams, Ltd., for Herbaceous Plants; Mr. A. Wilson, for Tulips; Mr. H. Burnett, for Carnations; R. Ashworth, Esq., for Orchids; Mr. H. J. Jones, for Sweet Peas; Kelway & Son, for Pyrethrums, etc.; B. R. Cant & Sons, for Roses; Mrs. Collingwood, for Orchids; Mrs. Hills, for Orchids.

Silver Banksian Medal.

J. Peed & Son, for Gloxinias; G. & A. Clark, for Herbaceous Plants, etc.; Laxton Bros., for Strawberries; Mr. W. Iceton, for Foliage Plants; Mr. B. Gayford, for Grapes, etc.; Mr. A. J. Harwood, for Asparagus; Mr. R. Sydenham, for Sweet Peas; Mr. H. Crane, for Violas; Dickson's, Dublin, for Tulips; Reamsbottom, for Anemones; Watkins & Simpson, for Sweet Peas, etc.; The Misses Hopkins, for Alpines; Mr. T. Jannock, for Lilacs, etc.; Swanley College, for Vegetables; Carter, Page & Co., for Cactus Dahlias.

ORCHID SALE. (See also p. 346.)

The sale of duplicates from the collection of Francis Wellesley, Esq., on Wednesday, at Messrs. Protheroe and Morris' Rooms, realised close on £1,500, the lots being principally Cypripediums, Cattleyas, Lælias, and some hybrids. The event of the day was the keen competition for the beautiful C. Thalia "Mrs. Francis Wellesley," carried on between M. Jules Hye de Crom, of Ghent, and G. F. Moore, Esq., of Bourton-on-the-Water; Mr. Moore ultimately securing the plant for 285 gns., which is the record price for a hybrid Cypripedium. C. Mrs. Wm. Mostyn brought 44 gns., C. Memoria Jerninghamiæ 32 gns., C. Ville de Paris 32 gns., and others nearly as much; Cattleya Mossiæ alba Miss E. Harting 60 gns. and 55 gns., while others obtained proportionately good prices. The specimens were in fine health, and in most cases good large plants.

ANSWERS TO CORRESPONDENTS.

Apples: *T. A. D. S.* and *L. E. W.* A fungus called Botrytis vulgaris is the cause of the mischief. Thoroughly drench every part of the trees during winter, before the leaf-buds begin to swell, with a solution of sulphate of iron prepared as follows: Water, 50 gallons; sulphuric acid, one pint; sulphate of iron, 25 pounds. Add the acid to the sulphate, then mix the water by degrees. A wooden vessel must be used. When the leaves are fully expanded spray with half-strength Bordeaux mixture, and again just before the blossom opens.

Aster Mildew: *Junction.* The injury is caused by a mildew called Erysiphe cichoracearum. The plants and soil should be sprayed every five days, until the disease is checked, with a solution of permanganate of potash (Condy's Fluid), diluted with water to a pale rose colour.

Cucumbers: *G. M.* There is no fungus or insect present to account for the injury.—*A. W.* Due to an over supply of water when the fruit is in a young state. There is no fungus present.—*A. M.* The injury is that of scorching, due to absence of shade when the leaves are moist.

Fig Trees Diseased: *G. C.* The diseased condition is due to a fungus, Cercospora Bolleana. A description, with figure, of this disease was given in our issue for July 7, 1900, p. 5. Dilute Bordeaux mixture has been useful in combating the parasite. Be careful to burn all the fallen leaves and fruits, and to remove any leaves and fruits that are seen to be attacked and are still on the tree.

Grapes Spotted: *S. S.* The spotting appears to be the young state of Glæosporium ampelophagum. Send again if the disease becomes more pronounced, and in the meantime spray the bunches with liver of sulphur, ½ oz. to one gallon of water.

Market Gardening: *M. K.* Judging from the particulars which you have furnished us with, we should advise you in erecting glasshouses on your half-acre of freehold land, to start building at the east or west boundary of the ground, and to put up three or four span-roofed houses, each of which should be made to extend from the north to the south. The intention being to cover eventually at least three-parts of the area with glasshouses, the dimensions of those must be determined by the nature of the produce you intend to cultivate in them. All things considered, you had better commence with Cucumber culture, if you understand growing Cucumbers for market, which is a very different thing from growing them in a private garden, inasmuch as market plants must be made to yield quick returns, and two or three separate lots of plants can be fruited in each house during the interval elapsing between February and November in each year. The last crop can be cleared out of the houses in time to make room for late flowering Chrysanthemums lifted from the open ground and transplanted therein for yielding flowers for cutting, and thus a continuity of income well into the new year. The growing of Grapes and Peaches for the London market, which is more than 100 miles distant from your place, is not to be recommended as two or three years must elapse before anything like full crops of fruit could be secured from Grape-vines and Peach trees planted at the end of this or the beginning of next year, although partial crops of Tomatos may and should be obtained from the houses so planted in the meantime. If you can possibly manage to have three low span-roofed houses of the following dimensions erected to start with, they will afford you a good basis to work on. Cucumber-houses should be 12 feet wide, and the length will be determined by the extent of your ground from north to south, which may be anything between 50 and 200 feet. Let the brick walls consist of 4½ inch work, with 9 inch strengthening piers at intervals of 7 or 8 feet. The walls should not be more than 2½ feet in height from the ground line (including wallplate), the piers being built flush with the walls inside and projecting outward. Piers built at the intervals indicated will serve instead of a wall to support the wallplate for securing half the 7½ feet long rafters of both houses, but the third house should be shut off from the other two by a 4½ inch wall, so as to admit of its being used as a propagating house, and it should have a division in it as a means, not only of economising heat, but also of maintaining a more even atmospheric temperature during December and January, when the young cucumber plants are being raised. Each house should be provided with four rows of 4 inch hotwater pipes the entire length, two on each side, one above the other, and close up to the side walls and piers. These details are extremely important to anyone about to embark in the business. You should be able to do a good trade in bedding plants in your neighbourhood by growing effective and up-to-date varieties of Pelargoniums, such as Raspail Improved, Denmark, &c., seeing that you could propagate a good stock of plants in boxes out of doors in the autumn and in heat in the new year and spring. With a view to further assisting you in the carrying out of your project regarding the erection of glasshouses we would suggest that you put yourself in communication with some good builder of commercial glasshouses, stating your position and requirements. By all means utilise all available ground in growing such vegetables (including Tomatos) and flowers (including white and yellow Marguerites) as you can dispose of locally.

Melon Plants: *W. P.* We find no fungus on the young plant, which appears to have been eaten by some insect. The injury may be caused by cockroaches or weevils, which hide in the day time. Try to capture them at night time by the aid of a lantern. The immunity of the neighbouring plants is an indication of the absence of disease.

Names of Plants: *H. R.* Not a variety of Sparaxis, but Tritonia crocata variety miniata.—*J. S.* Calceolaria integrifolia, a delightfully free-flowering species with branching inflorescence, the flowers being of the identical shade of that of Oncidium concolor.—*W. T.* Phlox subulata.—*R. H.* 6, Cytisus monspessulanus.—*A. G.* Amelanchier canadensis.—*P. Bros.* Brassia verrucosa.—*J. H.* Vanda parviflora and Dendrobium thyrsiflorum.—*Japonica.* 1, Vanda Roxburghii; 2, Oncidium leuco-cheilum. The Odontoglossum leaves are probably old ones which often show such marks after a long winter.—*H. W.* Why do you send such miserable scraps and give us so much trouble to remove and decipher the labels, and why do you send more than six, in Temple Show week too? We hope you will send a small contribution for the Gardeners' Orphan fund. We name some; from the rest the labels were detached; 2, Nephrodium molle; 4, Cyperus alternifolius; 6, Lomaria ciliata; 7, Davallia Mooreana; 9, a seedling Cypress or Juniper; 10, Elæodendron Chabrieri; 11, Chamærops humilis; 12. Asparagus tenuissimus; 13, Begonia vittata; 14, Panicum sulcatum; 16, Acacia, perhaps A. dealbata; 17, Pteris longifolia.—*H. H.* 1, Prunus Padus, Bird Cherry; 2, Ribes aureum.—*E. W.* Prunus sinensis, double form.—*J. P.* The flower is quite dried up and the characters of the crest lost. It is not a true O. crispum, but probably a form of O. Adrianæ.—*W. D.* 1, Prunus Padus; 2, Uvularia perfoliata; 3, Anemone sylvestris; 4, Mertensia sibirica; 5, Saxifraga Wallichi; 6, Tiarella cordifolia.—*C. P.* 1, Phyteuma obiculare; 2, Androsace foliosa.

Oak-Gall: *J. H. W.* The Currant or Grape Oak-gall, see fig. 144.

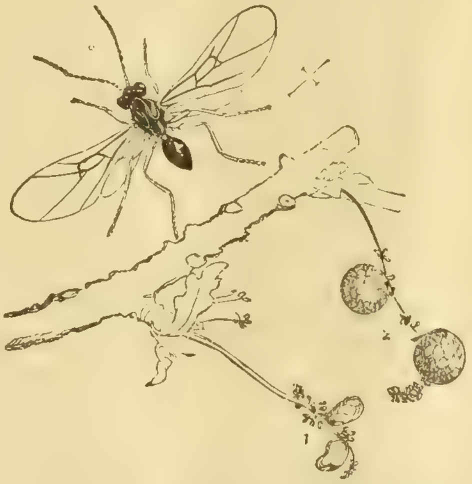


Fig. 144.—THE CURRANT OR GRAPE OAK-GALL PRODUCED BY CYNIPS QUERCUS-PEDUNCULI

Odontoglossum cirrosum failing to flower: *W. M.* As the particular plant you mention has been given the same treatment as the others which have bloomed regularly, it is very probable, as you suggest, that the failure may be due to something in the nature of this plant. It is quite common to find free-blooming and "shy-blooming" qualities in different individuals of the same species. Orchid growers know well that some Orchids are much freer in producing their flowers than others, the good or bad qualities being frequently noted in particular localities. Cattleya Warscewiczii from a certain locality got the reputation of being impossible to bloom, although those from other localities flowered freely. Vanda teres was said to behave in the same way, and numerous other instances might be mentioned. Under the circumstances it would be better to do away with the plant or place it in the open air for a time during the summer in a shady situation; it may induce the plant to flower when returned to the house if it survives the conditions out of doors.

Privet Hedge: *Hedge.* We cannot advise you to take the case into court. Presumably your complaint is not that the privet hedge overhangs your land, but simply that it has grown too high. The neighbour is entitled to fence off his land by a hedge or even by a high brick wall if he so chooses, provided he does not obstruct an adjoining owner's right to light for his buildings where such right has been enjoyed uninterruptedly for at least 20 years past, and we assume that your greenhouse has not been built so long as that. We suppose you cannot conveniently move your greenhouse away from the hedge, and therefore you cannot do better than try to settle the matter amicably. If the neighbour will allow you to cut the hedge this is as much as you can expect, and you will be wise to offer to do this at your own expense if necessary. Of course if the hedge overhangs your land you can cut it back, but the case is clearly one for friendly discussion on give and take principles.

Protection of Fruit Blossom: *R. B. R.* The "smudges" were tried on several fruit plantations in Worcestershire and Gloucestershire. Smother fires of various kinds were lighted, but last year the results were not satisfactory. On one particular night when fires were lit on the windward side of plantations, the wind veered round after a very short time, and much of the efforts that had been expended were wasted. The growers have a great deal to learn as to the most suitable material for burning. Heaps of rubbish, sometimes with a proportion of tar, have been experimented with. The results have not been satisfactory. Some growers have this year carried out experiments based upon practices of Califorina and elsewhere to protect the Orange groves from frost, and success is looked for in the system of burning oils for the production of heat rather than in the older style of smother fires. On April 26 last, there were 15° of frost in some of these plantations, and we believe that the cold wrought serious damage.

Red Currant: *W. B.* The caterpillar of the Gooseberry moth. See our number for May 19, where the insect is figured.

Rose Shows: *H. V. R.* A list of the principal Rose shows, so far as the dates were known to us, was published in our issue for April 28, p. 265. The London Show of the National Rose Society will be held on July 5 in the Royal Botanic Society's Gardens, Regent's Park.

Strawberries: *E.P.C.* The disease is due to a fungus, Sphærella fragariæ. It is very common but we do not often see plants so badly affected, Cut off and burn the affected leaves as far as you can, and spray with Bordeaux mixture.—*Drye.* Assuming your statement to be correct that the blooms are not injured by frost, then the blackening of the pistils is an arrest, or a reversion or harking back to the original unisexual condition of the Strawberry.

Tomato Disease: *Correspondent.* The Tomatos are suffering from "sleepy disease." Badly diseased plants should be removed at once. When the fruit has set before the disease appears, the soil should be soaked once a week with water containing a wine-glass full of formalin added to every two gallons. This will enable the plant to mature its fruit. The soil in which diseased plants are grown must be thoroughly sterilised before it is used for Tomatos again.

Tropæolum speciosum: *J. C. G.* You are right in believing this species to be that which thrives so well in the North of Scotland and in Wales, and there is nothing improbable in the statement that the species was common in Scotland in 1864, as it was introduced to these islands as early as 1846!

Violas or Tufted Pansies: *J. Burrows.* You will find the following varieties to be among the most serviceable of these plants:—A. J. Rowberry (golden yellow), Bullion (very rich yellow, early), General Baden Powell (rich orange), Ardwell Gem (pale yellow, very prolific), Blue Duchess (very fine), Ada Anderson (white and shaded with lavender), Mauve Queen (very free), Florizel (of a lilac-blush shade, most prolific), Mrs. A. Catford (white), Countess of Hopetoun (white), True Blue (very dwarf and compact), The Mearns (rich plum colour), and White Duchess (white, edged with blue). Should you desire to plant them at this season you must afford the plants partial shade and frequent waterings for a few weeks until they have become well established.

Vines: *F. A.* The peculiar disease on the Vine leaves requires more time for its elucidation. We will refer to the matter again in this column.

Communications Received.—A. D. W. (with thanks)—E. S. W.—E. F.—C. Sprenger (Naples)—Lord K.—W. J.—G. T. A.—J. K. B.—Theo. V.—Bathford—J. S.—H. W. C.—J. B.—Gardenia—P. C. van C.—J. McH.—W. H. C.—W. J. P.—Chloris—H. W.—E. H.—A. O.—F. B.

For Market Reports see page x.

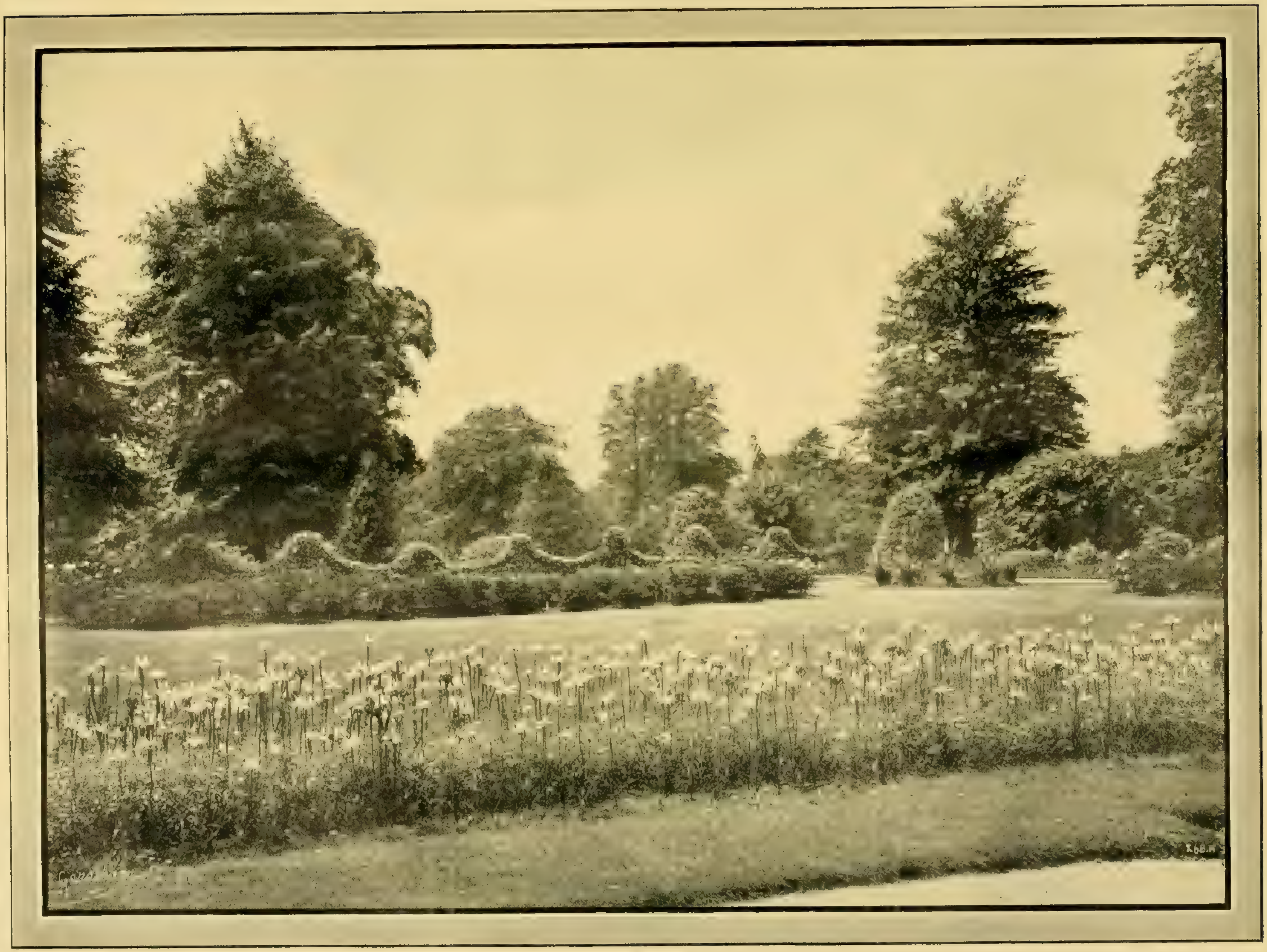


Photo by E. J. Wallis

BULBOUS IRISES IN THE ROYAL GARDENS, KEW.

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SPRING FLOWERS IN THE SOUTH-WEST.

THE spring of 1906 has been a very trying one in South Devon and Cornwall; indeed, in the latter county such a season had not, I was informed, been experienced for 30 years. Frosts of from 4 to 5 degrees, accompanied by biting easterly winds, continued for some weeks, with the result that all the Rhododendron trusses borne on the outside of the bushes were browned, only those sheltered by foliage being perfect. At Tregothnan, the splendid specimen of R. grande, better known as R. argenteum, over 16 feet in height and more in breadth, flowered finely, but its beautiful blossoms were brown instead of creamy white. What will in a more genial season probably prove to be the finest of the new Rhododendrons exhibited this season is Gill's Triumph lately certificated by the R.H.S. Raised, like so many handsome hybrids, by the head gardener at Tremough, and a cross between R. Thomsoni and R. Griffithianum (Aucklandi), it is of such a brilliant crimson-scarlet colour that it has been termed the scarlet Aucklandi. When a full-sized, perfect truss can be shown, it should take the first place amongst hybrid Rhododendrons.

A wonderful collection of new seedling Narcissi from the gardens of Mr. P. D. Williams, Mr. J. C. Williams, and Mr. C. Dawson were staged at the Cornwall Daffodil Society's show at Truro early in April, which were alluded to at length in the report of the same show. Of other shrubs, trees and plants in flower, the Acacias provided a brilliant spectacle, a group of A. dealbata about 30 feet in height, at Tregothnan, backed by evergreen Oaks, being a sheet of gold at the end of March, while a tree of the same species, over 40 feet in height, was flowering grandly at Trebah, in which garden a specimen of the Cape Silver Tree (Leucadendron argenteum), which has now been growing in the open for three winters and is 6 feet in height, was the picture of health. Amongst other Acacias in flower were A. Drummondi, A. armata, A. longifolia, A. melanoxylon, A. ovata, and A. verticillata. In May Abelia floribunda opened its long, drooping, cherry-red flowers. This plant is usually grown against a wall, but succeeds equally well as a bush in the south-west.

Anopteris glandulosa is a lovely shrub, but rarely seen in gardens. Its flowers resemble those of the Lily of the Valley Tree (Clethra arborea), but are considerably larger, the white bells, borne on long racemes, being over ½ an inch across. It is unfortunately a very slow grower, but flowers profusely even as a tiny plant. It is a native of Tasmania. In Mr. Dorrien-Smith's garden at Tresco Abbey, Isles of Scilly, there is a splendid specimen about 10ft. in height, and as much through that is white with flower in March.

Arctotis aureola has produced its bright orange flowers in the open throughout the entire winter, and is far more decorative than its relative, A. aspera arborescens. Towards the end of May a large sheet of Androsace lanuginosa commenced to expand its flowers and the dwarf Aster Stracheyi bloomed. At Tregothnan Banksia quercifolia was in good flower in April, Boronia megastigma, 5 feet in height, B. elatior, 5 feet, B. heterophylla, 6 feet, and B. polygalifolia were in bloom, as was the scarlet-flowered Australian climber Brachysema acuminatum. Calceolaria Burbidgei was in flower through all the winter months and C. violacea is now smothered with its helmet-shaped lavender blossoms with their yellow spotted throats. This Calceolaria has formed a bush 7 feet across at Tregothnan. Camassia Leitchlini has thrown up 5-feet flower spikes, and in April Cantua dependens was flowering in the open at Tregothnan. Clianthus puniceus and its white variety were sheets of flower in May, the two colours on the same wall making a pretty contrast. Cestrums (Habrothamnus) of different species have flowered, as have various Correas, C. cardinalis being the most brilliant. Chorizema Lowi was a mass of flower in April, when the pretty quilled, salmon-pink Daisy Alice was studded with blossoms. Flowers of Datura sanguinea grown in the open were exhibited at the Truro show, the most charming of the Deutzias, D. kalmiæflora has bloomed profusely, and Dianthus Emilie Paré, one of the prettiest of the Pinks, which commenced to bloom in March and continues to flower through the whole summer, is a sheet of flesh-pink. Diervilla (Weigela) Conquete, one of the best of the genus, has produced its pale pink flowers over 2 inches across, and Dimorphotheca Ecklonis, which comes through the winter unharmed, is now in full flower, while Diosma gracilis is daily adding to the number of its tiny white flowers. Eriostemon neriifolius has borne its white, pink-budded star-flowers lavishly in some gardens, and is a very pretty little Australian shrub. Embothrium coccineum, a common object in good Cornish gardens, created its customary glorious display in May, trees 30 feet to 40 feet in height being clouds of vermilion. Erythroniums, often difficult of culture, were to be seen in marvellous vigour in a certain Cornish garden early in April, many crowded colonies of a hundred or more, in the most perfect health, being in flower at the time. Gnidia carinata was bearing its yellow blossoms, as were many of the Grevilleas, including G. rosmarinifolia, G. alpina, G. sulphurea, and G. Preissi. Gladiolus tristis concolor was very beautiful in April, and perfumed the night air with its fragrance. Nurserymen apparently do not stock this pale sulphur variety, always sending out a form with purple-black bands on the three upper segments.

The Barberton Daisy (Gerbera Jamesoni) has commenced its season's display, and has already borne several of its brilliant scarlet flowers, while other Cape bulbs, such as the pretty buff Homeria collina, Sparaxis, Ixias and Freesias have flowered well, as have Ixiolirion montanum and I. tataricum, the former being by far the stronger and more floriferous of the two. Lavatera maritima bicolor, grown in some Cornish gardens as L. assurgentiflora, has perfected the first of its white, purple-blotched flowers, and Melianthus major has been in flower for some months. The little-known shrub, Neviusia alabamensis, has borne its curious flowers consisting of crowded white stamens and devoid of petals, and Osteomeles anthyllidifolia, from the Pacific Isles, appears fairly hardy, and is now bearing its white blossoms in crowded clusters. Many of the Daisy-bushes have been white with bloom, Olearia nitida, of rather recent introduction, 4 feet in height and as much through, being very attractive; the rare O. insignis has also flowered. Pimelea spectabilis was in fine flower at Tregothnan, and in several Cornish gardens Pittosporum eugenoides was in profuse blossom. Phlox divaricata Laphami has proved a great advance on the type, and is flowering well close to a bush of Polygala Dalmaisiana also in bloom. Ranunculus nyssanus has borne its polished yellow flowers, and Rehmannia angulata, which has proved hardy, is coming into bloom. Ramondia pyrenaica, its white form, R. serbica and Nathaliæ have flowered well between shady rocks, and in March the Chilian Rhaphithamnus cyanocarpus produced its purple flowers, to be followed later by blue fruits.

Romulea pylea bore its white yellow-centred blossoms in April, followed by the blue and white R. nivalis. Schizocodon soldanelloides was perfectly at home in a Cornish garden, as was Shortia galacifolia, but S. uniflora, though appearing healthy, had not flowered, and in a damp spot the Canadian Bloodroot (Sanguinaria canadensis) had perfected a breadth of white, Crocus-like blossoms. Early in March the enormous flower-heads of Senecio macrophyllus were at their best, and S. Petasites was in bloom through the winter. Solanum aviculare has borne the earliest of its purple yellow-centred blooms, the plant being also decorative when hung with large egg-shaped yellow fruits in the autumn. C. crispum has been covered with lavender-coloured blossom. One of the prettiest shrubs in the garden is Sutherlandia frutescens, a native of the Cape, which for six weeks or more has been scarlet with closely-packed racemes of drooping flowers about 1½ inches in length. In the middle of May a large plant of Veronica Hulkeana nearly 6 feet in height and over 7 feet across was a sight of wondrous beauty, the branching sprays, drooping slightly from the wall forming a feathery cloud of lavender. The shoots are cut when they reach perfection, in order to prevent the plant suffering from seed-production, and this year 424 flower-sprays were severed for indoor decoration. Viburnum rugosum, from the Canary Isles, is a rare shrub, that in two gardens produced its flat white flower-heads in great profusion. Tulips have made a brilliant display, some especially noteworthy being T. Batalini, T. Clusiana (often difficult to flower), T. ixioides, yellow with dark brown centre, T. fragrans, the vivid T. Greigi, T. Kaufmanniana, T. linifolia, T. Ostrowskiana, T. præstans, T. pulchella, T. Sprengeri, T. triphylla, T. saxatilis, pale flesh-pink, with yellow eye, T. undulatifolia, the curiously marked Chameleon, and the fine yellow Mrs. Moon. *S. W. Fitzherbert.*

THE ROSARY.

HINTS FOR THE MONTH OF JUNE.

THE cold winds and frosts during April and May were very unfavourable to Roses, as the first growths have been much injured. It will take the plants some time to make secondary growths, which will cause the blooming season to be later than usual. All forced Roses in pots that have done flowering can now be placed in a sheltered position out of doors, first making an ash-base for the pots to stand on. They should be re-potted next autumn. Tea, Scented, and Noisette Roses recently planted out should be given a thorough soaking of water, followed by a good surface dressing of well-fermented manure. Autumn-grafted plants in 5in. pots can be plunged outside in beds and top-dressed in like manner. All such plants will make good specimens during the summer and autumn if the leading shoots are stopped twice at intervals during the growing season, not later than the end of July. The Rose grub is doing much harm, and should be pinched out from the curled leaves and buds, and destroyed. This pest and aphis can be got rid of by well spraying the foliage with a mixture of soft soap, quassia, and tobacco dissolved in hot water.

Standard Briars planted during the autumn should be made firm about the roots, and when towards the end of the present month or early in July the shoots for budding on become firm three or four of the strongest ones should be selected at nearly opposite angles and as high up the stem as possible for budding during July and August. All lower shoots on the briar stem can be eliminated. Well-ripened cuttings taken off with a heel from Roses that have been growing under glass will make roots freely now if put in sandy soil in small pots, and afterward plunged in a hot-bed frame at a temperature of 70° to 75°, and shaded from sunshine. Cuttings planted outside during October should be made firm by well treading in, and, unless planted in a northern aspect, should be shaded from the direct rays of the sun. This can be done by inserting amongst the cuttings a few sprays cut from bushes. If the ground is dry, all the cuttings should be given a good watering. The maiden buds on the Standard Briars and 'Manetti' stocks will soon require careful staking, and tieing-in of the shoots to prevent the "buds" from being blown out, and at the same time all wild shoots kept well pinched back, except the shoot growing above the maiden bud, which later on, as the bud gains strength, can be removed altogether. *J. D. Godwin.*

NEW OR NOTEWORTHY PLANTS.

PRIMULA COGNATA.[*]

P. cognata is closely related to P. stenocalyx, Maximowitcz agreeing as to foliage, bracts, and more particularly as regards the narrow calyx-lobes and the length of the rugose corolla tube. It differs, however, by its much longer pedicels and in the prismatically angled calyx-tube. *J. F. D.*

[This new and charmingly pretty Primrose is another of Messrs. Veitch's Chinese introductions through Mr. Wilson. It is a native of north-west Szechuan, in the neighbourhood of Sungpan, at altitudes between 10,000 to 12,000 feet, and affects moist, loamy banks or humus-clad rocks, fully exposed to the sun and weather. The flowers are delightfully scented, light bluish-purple, about 1 inch across, and borne in umbels on scapes 4 to 9 inches high. The scapes arise from a dense rosette of pale green, obovate-oblong, rounded leaves 1½ to 3 inches long, pedicels slender, erect, 1 to 2 inches long, calyx-segments narrow; petals deeply bifid.

From the altitude of its habitat this new Primrose should be quite hardy in this country, and there is reason to believe it will prove a good perennial. P. cognata flowered for the first time in this country in March and early in April last, at Coombe Wood. Our illustration is taken from a plant forwarded to Kew for name by Messrs. Veitch.]

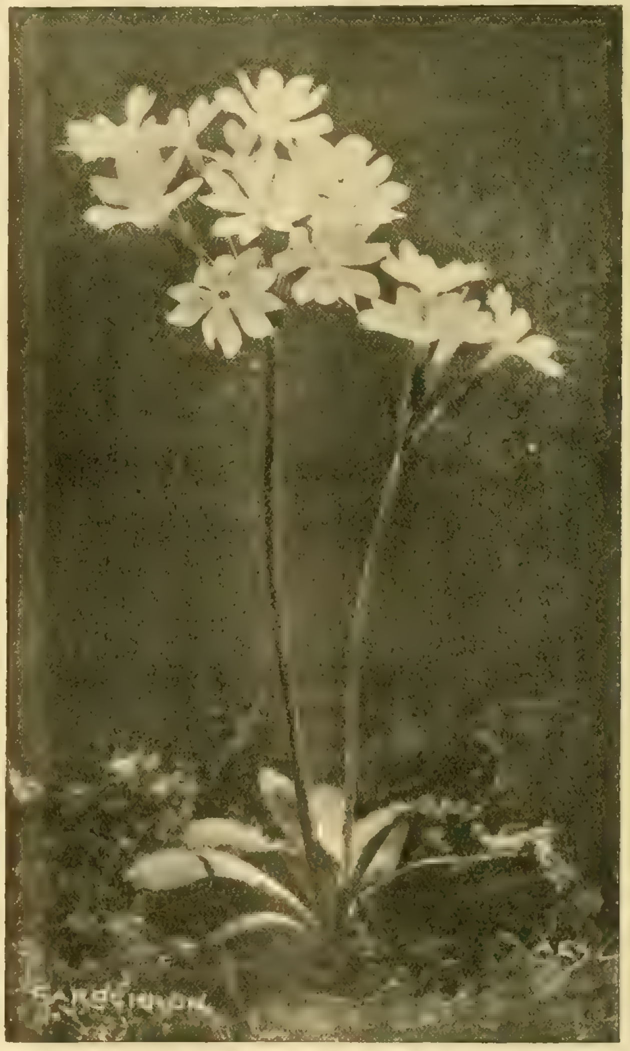

FIG. 145.—PRIMULA COGNATA (REDUCED); COLOUR OF FLOWERS BLUISH-PURPLE.

TREES AND SHRUBS.

TREES SUITABLE FOR WATERSIDE PLANTING.

NOT all of us see with the same eye the varied appropriateness of vegetable forms to certain well-defined positions in the garden and pleasure grounds. Most persons acknowledge this fact when, on the margin of lakes and streams, pendulous forms are planted, say, of the Common Ash, the Weeping Willow (in allusion one supposes to the sort of Willow that grew at Babylon, which, by the way, was a Poplar). There are other trees with hanging branches quite as effective as this one, but lacking the poetic sentiment, of which I may name some purple and green-leaved forms of the Elm and Beech; Sophora japonica pendula, a remarkably pretty tree, totally differing in habit from the type form; Acacia Bessoniana when not subjected to close pruning, and thus rendered mop-headed, the treatment usually meted out to its relative A. inermis, one of the horrors of the suburban garden.

Of a different style of growth, and yet assorting harmoniously with these, mention may be made of the flat-branched Conifers, such as the Lebanon, Atlas, and Deodar Cedars, which, when grouped or planted as solitary specimens on bold projections of a lake, are, when observed from a distant point, extremely effective objects. Many of the true Spruces and Silver Firs and Pinus Strobus and P. sylvestris are not much less so. Between the drooping and the spreading forms the aggressively perpendicular or columnar habited trees come in as suitable contrasts, and preference should be given to such of them as need neither pruning nor tying in order to keep them to the pyramidal or columnar form as the case may be. Hence, in all arrangements, except the purely formal or symmetrical, pyramidal Hollies, Yews, Sweet Bays, and the like would find no place. Instead, it would be advisable to plant Thuias, Cupressus, and Juniperus of species, namely, T. gigantea and its varieties; T. occidentalis, and such of its varieties as Ellwangeriana, Spaethii, Warreana, and the aurea variety of this last; orientalis, the golden and silver varieties, and pendula. Cupressus Lawsoniana in most of its forms shows admirably by the sides of lakes, but appears best when in groups of three to five trees at 6 to 8 feet or more apart; C. macrocarpa, the upright form, and C. nootkatensis (Thuiopsis borealis). Of Juniperus I would choose the more upright habited, such as J. communis, J. hibernica, J. h. compressa, J. suecica, J. japonica, and J. j. aurea. J. virginiana is of too gloomy an aspect to be much planted near to water, otherwise it is suitable in growth. There are several variegated varieties of it which might find favour with some. Pinus Cembra should not be omitted, its habits being strictly columnar and neat. In Pinus I should mention P. Pinea, so much employed in Italian landscape, which soon loses its lower branches, and presents a globular crown. It is useful as a contrast to spiky forms of trees, either evergreen or deciduous, and is also not out of place in formal garden landscape. Pinus Mugho, a dwarf, and many stemmed species, growing, according to soil and position, from 5 to 12 feet high, and the varieties of Juniperus Sabina, viz., prostrata and tamariscifolia, are appropriate to places on the banks where a view over them is obtainable. Species of Conifers which can be propagated from cuttings seldom make symmetrical trees, and remain in the branch form and appear lopsided, but as such they have their uses in places overhanging water, or upon the upper parts of rockeries. The Silver and Hemlock Firs are the more suitable of these cutting-raised plants. *F. M.*

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[*] PRIMULA COGNATA, *Duthie, n. sp.* Herba perennis. Folia rosulata, 1½-3 poll. longa, obovata vel spatulata, obtusa, in petiolum alatum sensim angustata, supra minute puberula, subtus farinosa, marginibus ad apicem crenato-dentatis, ciliolatis, costâ et venis subtus conspicuis. Scapus circa 9 poll. longus, farinosus. Flores umbellati, suaveolentes, pallide violaceo-purpurei, faucibus albis. Bracteæ 3-5 lin. longæ, lineari-lanceolatæ, ciliolatæ, ad basim haud productæ. Pedicelli 1-2 poll. longi. Calyx 4 lin. longus, tubo angulato, lobis linearibus, obtusis, ciliolatis, farinâ flavâ intus dense indutis. Corollæ tubus calyce subduplo longior, cylindratus aut subcampanulatus, rugosus, limbo fere ad basim divisis; lobis obovato cuneatis, alte bilobatis. *J. F. Duthie.*

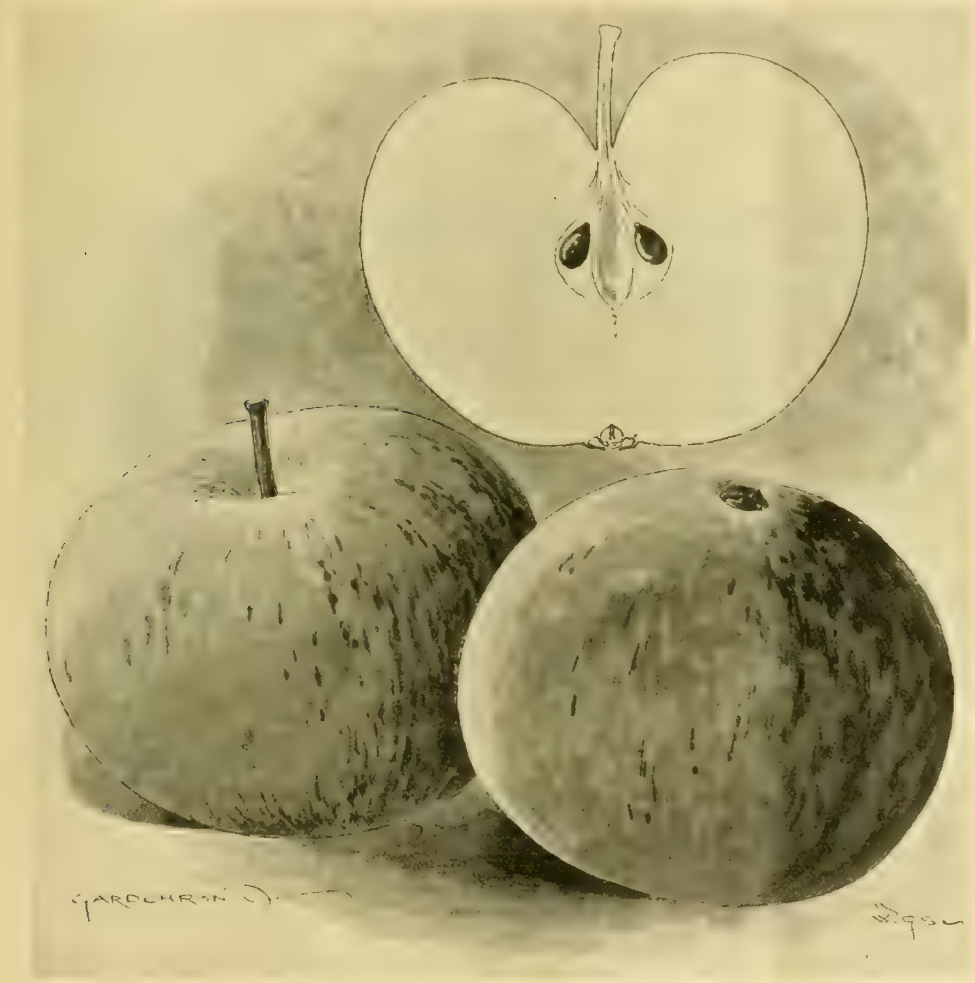


FIG. 146.—APPLE "STAR OF DEVON," AS THE FRUITS APPEARED IN MAY.

FOREIGN CORRESPONDENCE.

NURSERYMEN'S VISIT TO HOLLAND.

MESSRS. BOSGRA, of Bergum, Friesland, on p. 330, suggest that the British nurserymen who are intending to visit Holland this month, should extend their tour to Friesland and Groningen, and I beg to support the proposal. There are many nurserymen near Groningen who will be delighted to welcome any gentlemen from England, and who will do everything in their power to give them any information that can be useful. If our suggestion can prevail on our English colleagues to visit Groningen, I sincerely hope they will not pass my nursery without giving me a call. I shall be delighted to give them every assistance possible. *P. C. van Calcar, Nurseries, Sappemeer, Groningen, Holland.*

APPLE STAR OF DEVON.

THE variety of Apple shown at fig. 146 first came under our notice at the exhibition of the Royal Horticultural Society on November 21st last, when we described it as being of moderate size, richly coloured, with red on the side next to the sun, and streaked with red over yellow on the other side, flesh-soft, sweet, and possessing agreeable flavour. We have had a further opportunity of judging of its merits from fruits received recently from the raiser, Mr. John Garland, who had charge of the gardens at Killerton, Devonshire, for more than 42 years. The fruits, when cut a week or so ago, were remarkably fresh and crisp, and possessed good flavour, in addition to an attractive appearance. These good qualities at so late a season may entitle it to rank as one of the best of the late-keeping dessert Apples.

A correspondent sends the following further remarks relating to this fruit:—

"This Apple, in addition to its keeping qualities, has a handsome rosy exterior, which greatly increases its commercial value. In the spring months, when Star of Devon is in season, there is a demand for a good Apple to precede the Tasmanian varieties. Fruits have recently been sold wholesale at 15s. per bushel of 40lb., a figure which should make it a remunerative Apple for market purposes. Mr. Garland, who holds the stock, informs me that on the Paradise Stock it is a clean, healthy grower, and a recent inspection of the trees confirms this statement."

Mr. Garland tells us that the tree is of good habit, admirably adapted for growing as pyramids, bears freely, and produces its fruits in clusters of twos and threes.

WATER GARDENS.

(Continued from p. 324.)

NYMPHÆAS AND OTHER AQUATICS.

We will now consider the water plants that can be grown without protection in the English climate, and suggest which of them to admit into the water garden, and which of them to avoid as pests that are likely to cause endless trouble. It is quite possible to buy a sixpenny plant and feel quite satisfied with its behaviour for a year or two, but ten years afterwards endless labour will be required to rid the lake of its progeny. Many submerged plants are of this description, and although some possess very beautiful foliage and others have showy flowers, they are not to be recommended for any expanse of water that cannot be readily drained away. Such plants could easily be grown in rock-pools or ornamental ditches, where their increase can be controlled.

IT has already been suggested that Nymphæas should not occupy the centre of any ornamental water, but should occur in schools at the margin or fill any open expanse of water that may project inland from the main body. An essential requirement, in order that full sunshine may be obtained, is that the situation be open. The depth of water need not exceed 3 feet for any Nymphæa, although the stronger growing varieties will thrive in deeper water. The smaller kinds of Water Lilies should occupy a shallow bay apart from the others, and the water for these need not exceed a foot in depth, although they will thrive in 2 feet of water. A system of planting in baskets has established itself, but there is much to be said against the practice; in the first place, it is an unnatural way of growing Nymphæas, and I think many failures to start plants into growth are attributable to this method of planting. One cannot do better than to float a raft on the water, and thrust the tubers in the mud at the bottom, providing the roots are large enough to resist snapping. In the case of young growing plants, the crowns and leaves could be thrust through a hole in a square of turf, and the plant secured to the sod with raffia, and afterwards be sunk into position, moulding mud over the turf until well covered. Mud is their natural rooting medium and sole protection from a kind of basal decay that is ever a source of anxiety with plants grown in baskets. Planting in deep water must necessarily be done with baskets, but any work that can be done with safety by simply baring the arm and thrusting the tubers home with or without a square of turf, is a preferable way of establishing Nymphæas.

VARIETIES OF NYMPHÆAS.

There are between forty and fifty kinds of Water Lilies, derived from four or five recognised species, all good enough for any water garden, but of this number less than half are suitable for the larger lakes. But it will be advantageous to have a few good varieties only in colonies of each variety, and a dozen kinds will suffice for most purposes. Of white Water Lilies, the old Nymphæa alba is excelled by its varieties and by several others, hence it may be discarded for any but very large sheets of water. It is too aggressive for association with less rampant kinds. Candidissima is the choicer form; Gladstoniana has giant flowers, with broad petals, surrounding a cluster of burnished yellow stamens; its leaves are on an equally proportionately large scale. Marliacea albida is another well-known and beautiful flower; tuberosa, a vigorous grower, with a multitude of choice white and very fragrant blossoms, possessing stout shell-like petals, and its form Richardsoni, whose petals are arranged as in Dahlia Juarezii, very narrow toward the centre and with very wide sepals, which are pure white throughout, the yellow centre rarely showing. The above may be considered the best white Water Lilies for our purpose. Another might still be added—Caroliniana nivea, a medium-sized variety, with lovely refined blossoms. It requires planting in the warmest parts of the lake, or few flowers will be produced.

Yellow or yellowish Water Lilies include the charming but terribly aggressive Marliacea chromatella, a variety of great beauty, and one whose elegantly mottled purplish leaves need ample space, and whose lovely flowers reach an enormous size and great depth of colouring as the plants gain strength. It is coloured a pretty shade of deep sulphur at the base, which becomes paler at the petal tips. Sulphurea grandiflora is a splendid form, with heart-shaped marbled leafage and pale sulphur, elegantly pointed flowers, that deepen to a clear yellow central cluster of stamens. Chrysantha also has marbled leaves and pure yellow flowers that deepen day by day until they reach the rich orange tint of the anther cluster. Its growth is none too vigorous for a year or two after planting. Aurora is well named. Its flowers reveal none of their glorious colouring when they first open, and may, in truth, be considered dull, but on the second day the tints begin to assert themselves, and the mixture of yellow, rose and green, gradually fading to a pinkish red, develops into a colour scheme perfectly modelled. Seignoureti has lovely bronze spotted leaves, but the flowers are surpassed by those of lucida.

Nymphæas whose flowers range from pink to rose-red and crimson shades are very numerous. They are very difficult to describe, for a pallid rose flower may develop into a glorious crimson ere it fades. Tuberosa rosea claims precedence over all known Water Lilies on account of its exquisite refinement. No Water Lily I have ever met could compare with it. It is a free grower, with emarginate pale green leaves, and produces cup-shaped flowers that are coloured a silvery pink, the petals possessing the sheen of mother-of-pearl. It is exquisitely fragrant, and in no wise a difficult plant to manage. James Brydon ranks next. Its shapely flowers of reddish crimson hue are perfectly rounded and broad petalled; a fully-expanded flower is always cup-shaped, and the large cluster of deep orange stamens are seen in splendid contrast. The leaves, too, are beautiful—a rich bronze in a young state, and finally becoming dark green. Colossea, whose flowers are fragrant and with the colouring seen in Peach blossoms; William Doogue, with flesh-pink tinted flowers of that perfect outline so characteristic of tuberosa, and William Falconer, another hybrid whose massive flowers are finally coloured a dark crimson, and whose leaves are tinted red in a young state, are all sturdy growers that one should plant.

Star-shaped Nymphæas of pink or red colourings are well represented by the two very beautiful plants, Gloriosa and Robinsoniana, the former with multipetalled flowers of great beauty, but whose tendency to form fasciated growth is so marked that biennial lifting is desirable to keep it in a flowering state. Robinsoniana has leaves marbled on the reverse side and on the petioles. Its flowers are coloured an intense crimson. Both these hybrids make centrifugal tuberous growths, and unless the clumps of tubers are frequently divided nothing but small leaves develop, no matter how well the plants may be cultivated. Lucida, whose ample leaves are elegantly marbled bronze, and whose starry, but large, flowers are coloured rose-pink with vermilion centres; Frobelii, a kindred plant, with wine-coloured flowers that deepen to a rich crimson, and Ellisiana, with rose-red wide-petalled flowers of exquisite form and fragrance, constitute a trio of dark-coloured Water Lilies that for vigour, hardihood, and wealth of flower will prove hard to surpass.

The large group of deep-coloured forms of Nymphæa Marliacea represents a type of flower mid-way between the star-petalled and the cup-flowered forms. Carnea and rosea, pale flesh-pink and darker tinted respectively; Flammea, whose leaves are elegantly marbled, and whose flowers are deep red, with paler tips to the petals, and a pool of fire in the centre surrounded by flame-red stamens; and Ignea, almost wholly coloured flame-red throughout, complete a list of strong-growing Water Lilies that for variety of form, colour, leaf spotting, and general excellence will prove as good a selection as can be made. There are a few newer ones, but of too recent introduction to admit of much being said of them; some are good, but little is known of their duration or permanent value.

Any wide shallows that lend themselves to the purpose may be planted with a selection of the smaller Water Lilies of the Laydekeri, Odorata, and Pygmæa groups, but of these a fuller account will be given later.

Plant Water Lilies in April, May, and June only; sun-warmed water is essential to their requirements, and without it there is little chance of success.

(To be continued.)

PLANT PORTRAITS.

BUDDLEIA VARIABILIS, VAR. MAGNIFICA.—*Garden*, May 26.

LILIUM BROWNII, VAR. LEUCANTHA.—*Garden*, April 28

ONCIDIUM TIGRINUM SPLENDIDUM.—*Orchis*, No. 2.

RASPBERRY DE BILLARD.—A "perpetual" variety derived from Belle de Fontenay. *Revue Horticole*, April 11.

RHODODENDRON PINK PEARL.—*Revue de l'Horticulture Belge*, June 1.

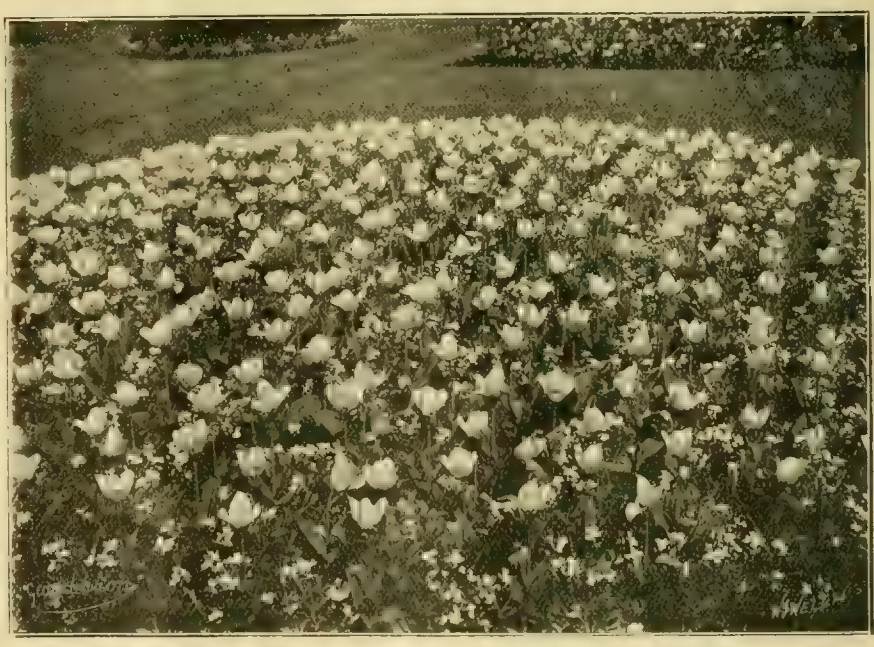


FIG. 147.—A BED OF TULIPS IN EAST PRINCES STREET GARDENS, EDINBURGH.

TULIPS AT EDINBURGH.

WE have on several previous occasions illustrated the flower beds in the famous Princes Street Gardens, Edinburgh, as they have appeared in summer. At fig. 147 is presented an illustration of one of the beds as it was seen a fortnight or so ago. There are fifty-six beds in the East Princes Street Gardens, and last autumn they were planted with the following varieties of Tulips: Proserpine, Vermilion Brilliant, Ophir d'Or, Stanley, Joost Van Vondel, Queen of Violets, Keizer Kroon, Moucheron, Prince of Austria, Thomas Moore, John Bright, and Couleur Cardinal. The groundwork of the beds was composed of Arabis alpina, Myosotis of sorts, Violas, and Alyssums. The beds contained 75,000 bulbs. In the particular bed shown the white Tulip Joost Van Vondel was planted, and interspersed was Arabis alpina. The effect was agreeable and pretty, the Tulip flowers being well above the level of those of the Arabis.

Mr. J. W. McHattie, the city gardener, has merited much praise for his treatment of this and other parks in the city of Edinburgh.

ORCHID NOTES AND GLEANINGS.

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDEES."

The April issue of this excellent work gives illustrations and descriptions of 13 good Orchids, and representations of two genera, new to the work, viz., Coryanthes and Trichosma, have been commenced.

Brasso-Cattleya Peetersii.—This is a pretty hybrid obtained by M. Peeters, of Brussels, between Brassavola glauca and Cattleya Lawrenceana. The flowers are of rose-purple colour, the bases of the petals and lip white with a yellow disc.

Cattleya Wincqxiana (Warscewiczii × velutina).—Raised by M. Peeters, and in form resembling C. Maroni. Sepals bronzy-orange; petals rose-coloured, with a yellowish flush; side-lobes of the lip white. The broadly expanded front lobe is of rose-purple colour with claret-coloured veining.

Cattleya Adolphinæ.—A pretty and floriferous hybrid with rose-coloured flowers, the tips of the side lobes and broad front lobe of the lip being purplish-crimson. Raised by M. Peeters between Cattleya Gaskelliana and C. amethystoglossa.

Coryanthes maculata.—The singular old species, with fleshy greenish flowers mottled with rose, whose structural peculiarities have been so often noted.

Coryanthes speciosa.—The flowers are of a bronzy orange shade. Both these flowered with M. Lionet, Brunoy, France.

Cypripedium Helen II. (insigne Chantini × bellatulum).—Two forms are illustrated, both with white dorsal sepals with greenish base and lines of rose-purple. The one has yellow petals and lip, the former spotted with brown; and the other is nearly white. The petals are tinged and spotted with purple.

Cypripedium Triomphe de Watermael.—A very brightly-coloured flower which appeared with Messrs. Duchesne & Lanthoine, Watermael, Brussels. It is nearest to C. Tityus (Spicerianum × oenanthum superbum), the greater part of the flower being bright ruby crimson, the lower halves of the petals and lower sepals being green.

Dendrobium Kingianum.—The old Australian species with white and rose-coloured flowers. The drawing was made from a plant in the excellent collection of M. le Baron von Furstenberg, Hugenpoet, Rheinland.

Lælio-Cattleya Wrigleyi.—Raised both by Messrs. Veitch and by M. Peeters between L. anceps and C. Bowringiana. Both firms secured an Award of Merit for the plant at the Royal Horticultural Society, November 10, 1903. Flowers formed like those of L. anceps; rose colour, with dark purple lip.

Lælio-Cattleya Admiral Dewey (C. Warneri × L.-C. elegans).—A fine flower of purplish-rose colour, with claret-coloured lip, margined with lilac. Raised by Messrs. Charlesworth.

Odontoglossum crispum Lindeni.—The finely-blotched form illustrated in the *Gardeners' Chronicle* April 24, 1897, p. 269 (not 369, as printed in the note).

Stanhopea tigrina.—One of the oldest, largest, and most beautiful of the genus. The flowers are yellow, marked with claret colour. Flowered by Mme. Madoux, Auderghem, near Brussels.

Trichosma suavis.—The well-known species from Sikkim and Khasia Hills, with fragrant, white flowers, the labellum marked with yellow and purple. A good cool house Orchid of compact growth. Flowered by Baron von Furstenberg.

NOTICES OF BOOKS.

Climbers and Wall Shrubs.

A handy little book, bearing the title of "A Concise Handbook of Climbers, Twiners, and Wall Shrubs," has just been issued by Messrs. Methuen and Co. Its author is Mr. Purefoy Fitzgerald, whose preface is needlessly apologetic. His selections are, as we think wisely, very comprehensive, and the gardener will not quarrel with him because his definitions are vague and elastic. Mr. Fitzgerald aims high in the matter of nomenclature—"One plant, one name, and that name to be recognised all the world over" is his ideal. We believe such an ideal to be unrealisable, but the nearer we can get to it the better, and the *Index Kewensis*, the Kew "hand-lists," and other works compiled after the same model as the Index have greatly helped us in this matter. But even the Kew Index is not infallible; indeed, it does not pretend to be, and the constant progress of science necessitates modifications and entails constant addition. People complain of the barbarous Latin names, as well they may, from their point of view, but we generally find that the grumblers are people who do not seriously want to know anything about the plants they cultivate. If they do, they very soon realise the advantages of a system of nomenclature which is, as the author says, recognised all the world over. If a Latin name be made use of, it can be traced to its source in the records, but in the vast majority of cases there is no means of verifying a popular name. A Frenchman or a German could not recognise the words "Primrose" or "Daisy," for instance, and those among us who think those names have long been associated with particular well-known plants may be surprised to learn that their present application is comparatively recent, and that our forefathers applied the names to quite other plants. Again, such words as Lilium and Laurus have a definite and universally-accepted botanical signification, but when, in common parlance, we speak of Lilies or Laurels we are really speaking of scores of widely different plants, the great majority of which have no real claim to the name they bear. The care that has been exercised in the compilation of this book shows that the author has appreciated the difficulties of the nomenclature question, and has done his best to meet them.

After the preface, which has elicited these remarks, we come to some excellent directions for the location and formation of pergolas, and for the selection of climbers wherewith to cover them. This section is followed by an alphabetical list of plants that may be used for covering walls and similar purposes. First the name is given, then the popular appellation if there is one, if not, one is specially manufactured by translating the Latin name. This latter process is unnecessary. In practice, for instance, who ever speaks or writes of the free-blooming Abelia or the green-flowered Abobra? Following the name are given concise details relating to the appearance of the plant, the natural order to which it belongs, its synonyms, and the method of cultivation. It is remarkable what an amount of information is compressed into a small space, and so far as we have been able to test it the information given is accurate and trustworthy. Some of the plants mentioned are not absolutely hardy; for instance, Buddleia globosa survives most winters, but it was killed outright near London in the "grand" winters we had experience of some years ago. Even against a wall our own plants like the Colletias and the Choisya were killed outright. The author shows that he is "up-to-date" by his inclusion of many of the more recent introductions of Messrs. James Veitch and Sons, which have not yet become generally diffused in gardens. Colletia spinosa and C. cruciata are both included, but it has been proved that C. cruciata is only a stage of C. spinosa, as may be seen from figures given in these volumes in February 13, 1886, p. 205, fig. 40. Misprints are surprisingly few. Abutilon megaponticum should, of course, be megapotamicum. Vitis capriolata should be capreolata; but, as we have said, the reader will have to exercise much diligence to find slips of this kind. The illustrations are numerous, the index copious, and the whole book well got up and carefully edited.

The Garden Beautiful: and How to Make it so. By A. C. Curtis. Smith, Elder & Co.

The author's definition of a garden makes it a place for plants to be beautiful and at home in. It is as well to start with a definition like this, for people's tastes and predilections are so different. For some the plants are mere adjuncts, for which coloured tiles or broken brick-bats can be substituted to furnish colour effects. Then there is the nursery garden, or the botanical garden proper, where beauty of outline and arrangement are sacrificed to considerations of utility or investigation. Acting in conformity with his definition, as above quoted, the author descants very sensibly on what should, rather than on what may, be done in a small garden. There are some very useful plans which will be serviceable to suburban gardeners. We cannot attempt to criticise these plans in detail, as so much depends on the lie of the ground, the aspect, the soil and other conditions, which cannot be satisfactorily expressed in a small plan. It would seem to us, at first sight, that the author has not sufficiently commended either the evergreen shrubs like the Rhododendrons or the very beautiful spring-flowering trees. As we read further, however, we find that the claims of these plants are not overlooked. It is, however, true that in small gardens, such as the author is dealing with, the plant-lover is apt to be too ambitious and overstock his little plot. If the owner is a botanist he can hardly have too many, but then he must sacrifice those graceful effects which are so delightful to the gardener, and his plants will not, and cannot, be so well cultivated as they would be were their numbers fewer and they had more space in which to develop. The usual alphabetical catalogue of suitable plants to grow is sandwiched in between the general directions, and a chapter on rock and water gardens, which, especially the first, test the gardener's art severely. Roses, of course, have a chapter to themselves, and we are glad to find such cordial appreciation of Zephyrine Drouhin, which, till lately, at least, was better known on the Continent than here. It is just as well to remind the occupier of a small garden that if he wants Roses—and Roses especially—he must sacrifice much of his garden to them, or otherwise content himself with climbing or pillar Roses, and to such as can be grown against a wall.

The kitchen garden comes in for a considerable share of attention, but our space, or the want of it, forbids our making more than a passing mention of it. In conclusion, we may say that amid the myriads of gardening books lately issued this is decidedly one of the best. The technical details are well explained, and the literary style fluent and devoid of the rampant verbiage with which some writers strive to conceal their ignorance of practical gardening.

NEW INVENTIONS.

BUBBLE FOUNTAIN.

Fountains have lately been shown that form and discharge bubbles. If the atmosphere be calm the bubbles, being inflated with gas, rise in a column in the air and form a very beautiful spectacle.

The bubble fountain can be used as a garden decoration, and it is proposed to instal a large fountain on this principle at the Crystal Palace, Sydenham. The patentees are Messrs. Dickinson and Shields, Alliance Mills, Stoke Newington, N.

COLONIAL NOTE.

SOUTH AFRICA.

Pretoria.—A correspondent writes:—

"Our altitude is about 4,500 feet, but our temperature is about 2° F. above the normal for this altitude and latitude, owing to our lying in a narrow valley sheltered by the Magaliesberg and other hills.

"Pinus halepensis seems to be at home here. P. radiata (insignis) and Cupressus macrocarpa do not last for more than a few years and then die out; this is, of course, natural, as they are coastal species in their native haunts subject to a great deal of moisture from the sea-fogs even in the dry season. Casuarina Cunninghamiana is the most conspicuous and widely planted tree in Pretoria. Planted in rows and avenues, where its roots have access to the irrigation and drainage furrows which border every street in the old towns, it thrives splendidly. But planted in forest blocks it proves a hopeless failure; there are several such blocks near Pretoria and Johannesburg, perhaps 10 to 15 years of age. Callitris robusta is quite at home. For hedges, Cupressus macrocarpa has been largely used, but dies out badly unless its roots are near a water-furrow; where it does well it makes a beautiful hedge, but it is too often patchy and yellow. Biota orientalis is also used, but it is here subject to attack by an aphis, which deposits honey-dew, which soon becomes covered with a black fungus mould, producing a disgusting tarry looking deposit on the foliage.

"The English Oak thrives in similar situations in the town; we have some fairly good specimens planted in 1872 and now about 25 feet high. Phytolacca dioica is not unfrequently planted; it thrives and matures seed, but has been somewhat nipped by the severe frosts of the last two winters.

"Eucalypts are largely planted. E. globulus and E. tereticornis are among the most abundant species, and some fairly fine specimens of the former are to be seen. E. robusta does remarkably well. Firmiana platanifolia seeds every year. Ligustrum japonicum makes one of the best hedges where a little water is available, and is largely used. Hakea saligna, H. suaveolens, Doryalis caffra (Kei apple), Leptospermum lævigatum, and Lycium horridum are also used. In old Dutch gardens the common Quince is a favourite hedge plant, and the Pomegranate is also planted for this purpose; the idea in both cases is evidently to combine ornament with utility. Violets do well in shaded places. Roses make a brilliant show and have two flowering seasons. Pelargoniums are scarcely ever grown. Carnations and Cannas thrive amazingly. Lagerstrœmia indica is our most conspicuous ornamental shrub, flowering from December to February. Hibiscus rosa sinensis also makes a brilliant show in summer.

"The most conspicuous creepers are Bignonia venusta and Solanum Wendlandi. Bougainvilleas are abundant, but are usually 'off colour.'

"It is interesting to find that North Mexican plants and those from adjacent Arizona, New Mexico, and Western Texas, give the most satisfactory results of any herbaceous plants grown here. Such a result is hardly to be expected, for the region referred to is one of a Winter and Spring rainfall, whereas we enjoy Summer and Autumn rains. The most conspicuous examples of the point in question are the following:—Cosmos: I have never seen finer specimens; they grow like weeds and are spreading over the veld, and along the railway lines from one ganger's cottage to another. The Zinnia is becoming one of the commonest weeds along trek-roads; it quickly reverts to a miserable little, single, brick-red form. Gaillardias, Coreopsis, Œnothera rosea, and Œ. tetraptera, Œnothera biennis grandiflora, Mirabilis Jalapa, Ipomaea purpurea, and Tagetes erecta, are among the other plants of that region which show particular adaptability to the Transvaal climate. All of them, except the Gaillardias and Coreopsis, are rapidly establishing themselves in the Colony as 'garden escapes.' *X.*"

Vellozia retinervis.

The illustration, fig. 148, kindly forwarded by Mr. J. Burtt Davy, shows a plant of Vellozia retinervis *in situ* among rocks at Pretoria. The flowers are of a pale lavender or lilac colour, with the fragrance of Heliotrope. It flowers only for some two weeks in the year, after the early spring rains. In winter the leaves turn brown and the whole plant looks dead; at that time of year the bare brown stems look not unlike the tail of the Chacma baboon, and the Boer children, therefore, call it the "Babiaan-stertje" (i.e., Baboon's little tail). The plant grows in very arid situations, among rocks, and is a true xerophyte. I have transplanted several to my garden, but only a few are alive, and none of these have yet flowered. Like many of our plants, it is hard to transplant it successfully. *J. B. D.*

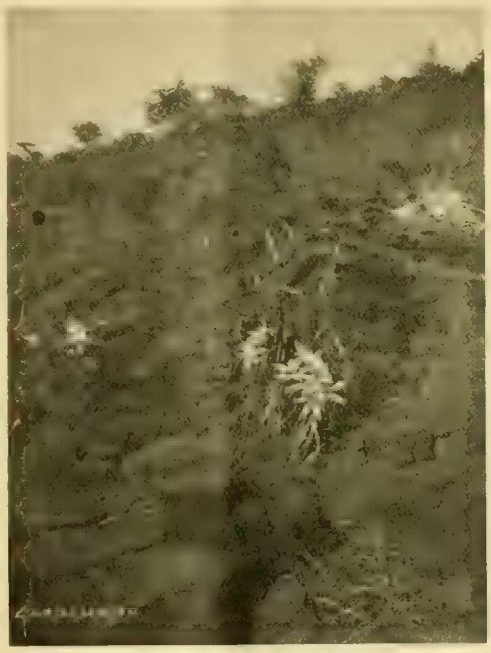


Fig. 148.—Vellozia retinervis growing in its natural habitat in South Africa.

QUEENSLAND.

The Colonial botanist, Mr. F. Manson Bailey, continues his useful publication, entitled *Contributions to the Flora of Queensland.* They appear originally in successive numbers of the *Queensland Agricultural Journal*, but are also issued separately. In one of the recent parts we observe descriptions of three new species of Nepenthes with figures, N. Pascœnsis, N. Armbrustæ and N. Garrawayæ.

TOBAGO.

The most conspicuous tree to be seen in flower at this time of the year in Tobago is the Cogwood tree (local name) Tecoma serratifolia, Don.

When fully grown it is from 25 to 30 feet high. The flowers are produced in large quantities and are of a bright yellow colour. They resemble, to a great extent, the yellow flowering form of Azalea mollis, although the flowers are not so large.

The tree blooms in the dry season, and generally produces three successive lots of flowers before the rains commence. The wood is hard and heavy, and is used locally for posts, &c., where strength and durability are required.

Cassia marginata, when in flower, is a showy flowering tree, and at a distance resembles an Apple tree in full flower. Unlike most tropical flowering trees—which as a rule soon lose their flowers—this tree retains them for three to four weeks, and at this season of the year is one mass of flowers. The tree deserves to be grown in every tropical Botanic Garden. *H. Millen, Curator, Tobago, B.W.I.*

VEGETABLES.

THREE GOOD VEGETABLES.

I have made exhaustive trials of many vegetables and should like to direct attention to the following:—Sutton's Favourite Cabbage Lettuce is grown as our main variety for early work. Sown at the same time as the Brown Cos, it stands the winter quite as well, and comes into use much earlier. The gardens here are very bleak, being fully exposed, but severe weather does not seem to injure this Lettuce any more than it does the coarser kind. Its edible qualities are unequalled.

Favourite Kale will furnish a large supply of greens, being much more productive than the ordinary Scotch and other Kales. Our seeds were sown during the first week in July, and the quality of greens cut from a given area of ground far exceeded that of any other variety.

Satisfaction Broccoli will so commend itself to growers that I think I may use the expression "once grown, always grown." It possesses a very hardy constitution, is of first quality, and is firm and solid. *J. Buckland, Walthamstow Hall Gardens, Sevenoaks.*

ELLAM'S CABBAGE.

I quite agree with Mr. Beckett (see p. 347). We have scarcely seen any bolting, but one or two plants may have done so. It is a first-rate early Cabbage. I grow for succession "Early Heartwell Marrow," and very few of this have bolted. It is a fine Cabbage and of delicious flavour. "Model" is on the same plot, and this is a fine large, and shapely Cabbage. It is of a nice colour and remains useable a long time. These are the only varieties we have now, and altogether there are about 2,500 plants. Flower of Spring and others are excellent, but we cannot grow all the varieties. Last year I grew nine sorts, and those mentioned above were the best. *W. A. Cook, Leonardslee Gardens, Horsham.*

—— Hitherto I have lauded the praises of this variety, but after my experience this year I must modify my praise, as quite one half of the plants in a large breadth have gone to flower. The seed was sown at about the usual date, which is July 28, and has always proved satisfactory. We make a second sowing of a maincrop variety a fortnight later. Although our crop proved so unworthy of the space afforded it, other crops of other varieties in local gardens have not suffered in the same way. Our seed was obtained from a reliable firm, therefore I feel sure the strain was right. We hope to give "Flower of Spring" a trial with "Ellam's" this season, and trust we shall have more satisfactory returns next spring. *J. Mayne, Bicton, Devonshire.*

THE CARTER SPINACH.

We have been gathering for eight months this variety of Spinach raised from one sowing. The plants withstood the winter and spring with impunity, and I would recommend those who have failed with other varieties to try this one. If the seeds be sown in well trenched and manured soil, failure will be next to impossible. *W. A. Cook, Leonardslee.*

BEDDING-OUT TIME AT COVENT GARDEN MARKET.

Every spring-time, as soon as the earliest trees begin to put forth their leaves, the suburban Londoner thinks of his garden, and makes preparations for the season's work. It is an inspiriting sight every evening, but especially at mid-day on Saturdays, to witness the number of passengers from the great railway termini who carry in their arms some plant or plants which they have selected from the florist's window or, maybe, from the coster's barrow. The suburban gardener is of the most persistent and determined type of men imaginable, for a mere enumeration of the difficulties and trials that beset his path would require more space than can be spared for the purpose. It is evident, however, that he so far succeeds in overcoming them that his work meets with sufficient compensation to induce him to work with increased interest and zeal in each succeeding year. In consequence of this there are thousands, indeed millions, of plants sold in London each spring for supplying the needs of amateur gardeners. The larger number is disposed of by importunate costers, who become, for a season, professional plant-sellers, and call at almost every house in London, not only every day, but two or three times in the day, with their Marguerites, Pelargoniums, Fuchsias, Lobelia, &c., and annuals. It is hardly too much to say that every suburban housekeeper dreads the advent of the plant-season, although there are few houses where the much abused coster fails to effect sales.

The enthusiastic amateur, however, who attended last season's shows, and has acquired the education derived from a study of some of the catalogues is not content to buy from the barrows, but prefers to choose his plants from a collection, and obtain them, as he says, at "first hand." He accordingly goes to the florist or to a market stand like that shown in the illustration at fig. 149, where he may be certain of purchasing all, or nearly all, of the varieties he has carefully marked in his catalogue, or written in his garden note-book. In the illustration may be seen groups of Zonal and Ivy-leaved Pelargoniums, Marguerites, and Pansies in flower, besides a large number of young plants in shallow market store boxes. Rambler Roses, and all the popular climbing plants, Fern roots, suitable plants for the rockery, Asters, Stocks, Antirrhinums, Calceolarias, Dahlias, and the little "creeping Jenny" or (Lysimachia nummularia), which, with its golden leaved variety, is a favourite London plant, almost rivalling the famous London Pride (Saxifraga umbrosa), also Celery plants, Cabbages, Rhubarb, herbs in variety, these may all be obtained from the plant emporium. Visitors to Covent Garden Market will see the stand we have illustrated at the western end immediately beyond the Central Avenue under the shadow of St. Paul's Church. As soon as the season for "Southampton" Strawberries commences, the area devoted to plants is curtailed, and later when Strawberries arrive from the home counties, the store boxes are almost expelled for the season.

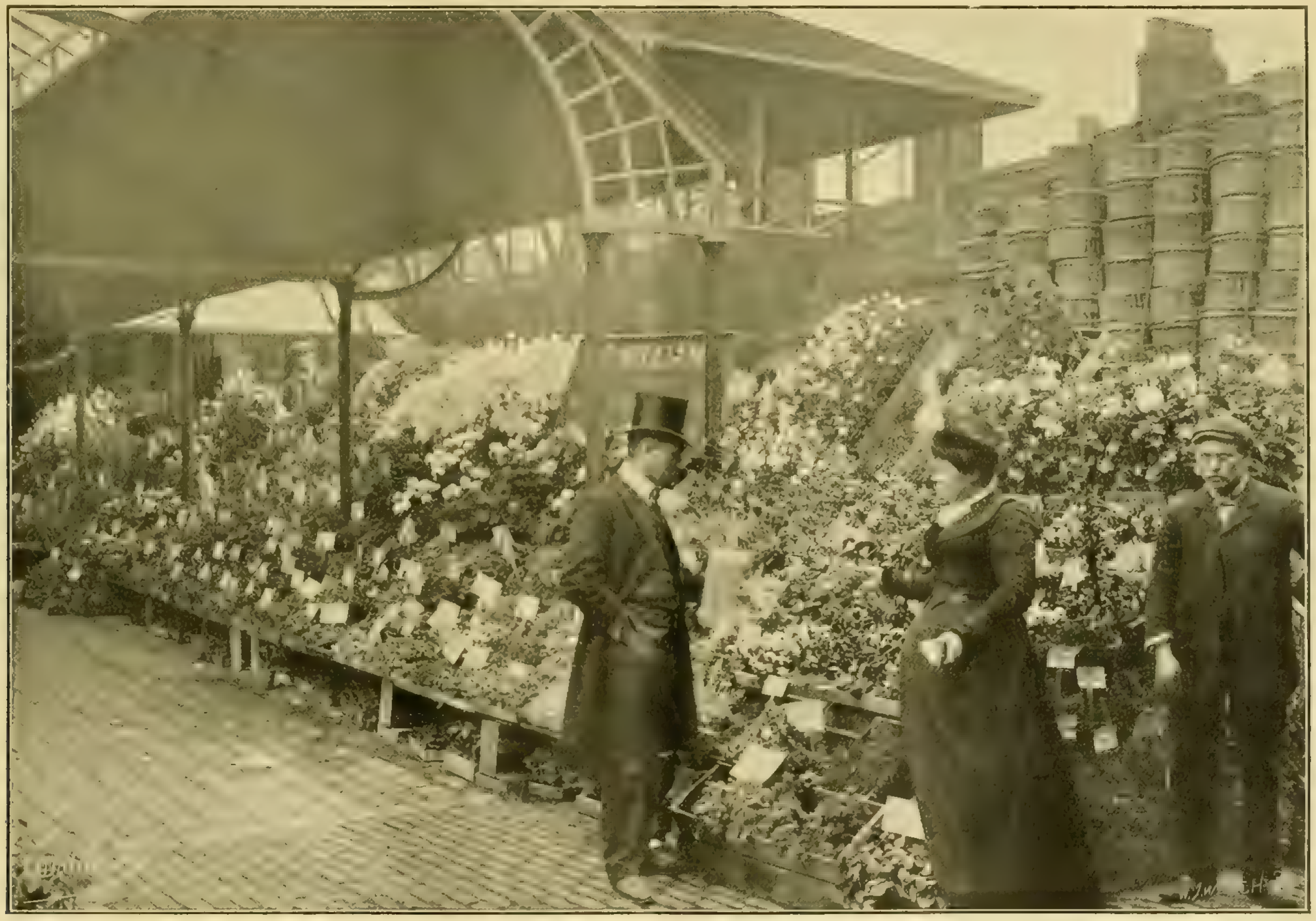


Fig. 149.—a popular "stand" in covent garden market in spring and early summer.

KEW NOTES.

Primula deorum.

A specimen of this rare and interesting plant is now in flower in the Alpine House. Although it has been in cultivation since 1892, when it flowered with Mr. T. S. Ware, of Tottenham, it has never become common till recently, a more plentiful supply of the plants having been introduced during the last year or two. The figure in the *Gardeners' Chronicle*, 1905, xxxvii., 98, f. 44, which was prepared from a painting sent by Mr. W. H. Stansfield, does not bear much resemblance to the plant now in flower. The leaves in the figure are too acute, while the flower tube is much longer, and the flower itself is flatter and more rounded. P. deorum has dark green, strap-shaped leaves, about 3 inches long, in a dense rosette. The flower scape rises about 8 inches high, and bears a head of about 20 flowers, each over ½ inch in diameter, the colour being a rich, rosy purple. It is a native of Mt. Rilo, in Bulgaria, where it was first found by Prof. Velenovsky in 1889, growing in moist, grassy pastures at an elevation of about 8,000 feet. Its nearest ally in the genus is the beautiful little P. glutinosa, which is somewhat difficult to establish in many parts of this country. They are both bog-loving species, but of the two P. deorum is the easiest to manage, as well as being a much more handsome-looking plant. It may be grown outside in an open part of the bog garden, or in a moist, shady position in the rockery. The flowers last a long time in perfection, for, although the early ones opened in the first week in May, they were still good at the end of the month.

Draba elata.

This is a new introduction from the Himalayas, where it is found on the sub-alpine ranges of Sikkim and Kashmir at elevations ranging from 13,000 to 14,000 feet. Unlike many of our well-known European species, which are usually of dwarf and compact habit, D. elata is a tall-growing plant of biennial habit. It forms in the first year a rosette of spatulate leaves, succeeded in the following spring by stems about 1 foot high, sparsely clothed with leaves, and bearing heads of bright yellow flowers. Individual plants do not make much of a show, but in groups they are effective in early spring.

IRIS DEMAVENDICA.

Plants of this species were received at Kew from Herr Max Leichtlin, of Baden Baden, in the year 1903, with the information that the species was a native of Mt. Demavend, in Persia. When it flowered this year, about the middle of May, it proved to be a most distinct and interesting plant of very dwarf habit, belonging to the section of the genus known as Cushion Irises. The stems, which are about 6 inches high, each produce two large flowers of a rich, claret-red colour. The standards are paler in colour than the rest of the flower, while the falls are richly veined with lines of a deeper shade. It has proved quite hardy on a warm south border at the foot of a wall, under the same treatment accorded to Irises of the Oncocyclus group.

BRYANTHUS BREWERI (A. GRAY).

The members of this genus form little bush-like plants, and are mostly natives of the mountains of North-Western America. There are only four species in cultivation, of which B. Breweri has lately flowered for the first time at Kew. Seeds of this species were received from Baron von St. Paul, of Fischbach, in Silesia, in the year 1896, and it has thus taken a long time in reaching its flowering stage. This plant was first collected by W. H. Brewer in 1860-2, and is found on the rocky mountain slopes of the Sierra Nevada at an elevation between 9,500 feet to 11,000 feet, growing in rocky crevices, where it receives the cool drip of the melting snows. In other places it grows on the level near mountain lakes, forming quite heather-like patches of considerable extent. It is somewhat similar in appearance to B. empetriformis, which is a native of the same region, but, instead of bearing its flowers in clusters at the top of the stem, B. Breweri produces its saucer-shaped flowers in long racemes. These are purplish-rose in colour, and are of large size for the genus. From 6 inches to 1 foot high, it is of spreading habit and will make a charming companion for the other peat-loving plants in the rock garden. *W. I.*

LILIUM SUTCHUANENSE.

This beautiful Lilium first flowered in this country at Kew in July, 1899, having been received from M. Maurice de Vilmorin two years previously. He raised it from seeds sent by a missionary from China. In 1904 Messrs. Veitch, of Chelsea, introduced a large quantity of bulbs, Mr. Wilson having found it growing freely on the Chino-Tibetan frontier at an elevation of from 7,000 to 9,000 feet.

Some plants have recently flowered in No. 4 Greenhouse. The species might well be described as an early flowering L. tigrinum. The bulbils in the axils of the leaves are absent, and the flowers are smaller, but the colour is very similar, and the plants are quite as tall, several being upwards of 6 feet in height, one plant carrying 25 flowers and buds. It appears to be of easy culture, flowering, I am told, in three years from seeds, so we may reasonably hope it has come to stay.

The bulb is rather small, and taking this into consideration the tall, vigorous growth developed by several of the bulbs is remarkable when compared with that of some of the Lilies.

A plant only recently flowering was of particular interest, two flowers being produced on each of the three lower flower stalks. It may be a common occurrence, but this is the only instance that has come under my notice. The colour is orange-scarlet, the flowers on some of the plants are freely spotted dark brown, while in others this character is not so marked.

A figure of the plant appeared as a supplementary illustration to the *Gardeners' Chronicle* for July 29th, 1905. *A. O.*

The Week's Work.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Biennials.—The present is a good time to sow seeds of biennials, either in beds in the open ground or in boxes in cold frames. It is a mistake to postpone doing so until later, as the dry, hot weather of July and August is detrimental to the germination of the seeds and to the success of the young seedlings. Wallflowers are amongst the best of biennial flowers, and they are invaluable for spring gardening. In sowing seeds of Wallflowers in the open care should be taken to prepare a good seed-bed for them. The soil should be moderately rich and friable, and be well broken up. Sow the seeds thinly, and thin out the seedlings when large enough, allowing sufficient space for each plant to develop properly. During dry weather see that they do not suffer from want of water, and keep the beds perfectly clean by the removal of all weeds. As Wallflowers are so apt to suffer by prolonged drought, after they have been planted out in the autumn, the practice of raising seedlings in boxes and then potting them up into 5-inch pots has much to commend it. Treated thus, they are planted out into their permanent quarters without disturbance of the roots, and thereby are enabled to withstand any adverse weather conditions. The extra trouble and expense entailed by doing this is recompensed by the perfection of bloom and the absence of "gaps" in the spring. The Canterbury Bell (Campanula Medium) is another good biennial plant that should find a place in every garden. The double and semi-double strains are to be preferred to the old single-flowered varieties, as they are not only superior in form, but also in richness and diversity of colour. The seeds should be sown now, either in open beds or in boxes in a cool frame, and when large enough the seedlings should be pricked out into a well-prepared bed in a shady corner of the garden, affording them water if dry weather is experienced. By September they will be strong plants, ready for planting into permanent positions in the flower borders. If the plants are examined in summer when they have finished flowering, and all the old blooms are removed from them, they will flower again in autumn. Seeds of the Sweet William (Dianthus barbatus) should be sown in open beds in as sunny a position as possible, and when the plants are large enough transplant them into good soil about 6 inches apart. In September they may be planted into their permanent quarters. The single varieties, with one or two exceptions, are to be preferred to the double ones.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Odontoglossums.—At this season a large number of Odontoglossums of the O. crispum type are in bloom, and when the flowers have remained open for a reasonable time it is advisable to cut off the spikes rather than to allow them to remain on the plant until the pseudo-bulbs shrivel, as in such cases it is difficult to restore the plant to its former strength. Small imported plants that are flowering for the first time should have their spikes removed soon after the flowers open, and be afforded a short rest afterwards. The foliage of Odontoglossums, after flowering freely, especially during very hot weather, may appear to be less robust than formerly, but if the plants receive careful attention, and have plenty of roots, the leaves will return to their normal condition when the nights lengthen. For some time after flowering the plants will require only very moderate supplies of water. Keep the surface of the compost only sufficiently moist to preserve the moss in a fresh, growing condition, and to prevent undue shrinking of the pseudo-bulbs. Afford plenty of ventilation. Keep the plants well shaded from strong sunshine, and afford them a light spraying overhead several times each day whenever the weather is warm and bright. These cool-growing plants will require no more fire heat for several months to come.

Treatment of freshly-imported Plants.—At the present time a large number of Odontoglossums is being imported into this country. Purchasers of these should first of all prepare a convenient place for them in the cool house, and spread a thin layer of sphagnum-moss on the stage. The pseudo-bulbs should then be freed from all rubbish and decayed portions and laid upon the sphagnum-moss in such a manner that they will not touch each other. Spray them lightly overhead occasionally to encourage the shrivelled pseudo-bulbs to plump to their normal condition. New growth and roots will soon appear, when each "piece" should be placed separately into comparatively small pots which have been half filled with well-dried pieces of the Fern-rhizome taken from the peat when preparing it for use. The compost should consist of well-drained peat and freshly-gathered sphagnum-moss. To fix these newly-imported plants firmly, a good plan is to place a strong piece of the Fern-rhizome down between two pseudo-bulbs, and then to twist it around the stem of the plant, the ends being pressed into the drainage, afterwards filling up to the base of the plant with the potting compost. Afford very light waterings only until the new growths gain in strength and roots become plentiful.

Lycaste Skinneri.—In the same house the varieties of Lycaste Skinneri have passed out of bloom, and immediately growth re-commences the plants should be repotted. They will grow perfectly well in a compost of thoroughly-drained peat, loam, and sphagnum-moss. Although Lycastes are moisture-loving plants, the young growths will quickly decay if the plants are potted too low, also if much water is afforded before roots become plentiful. Water them as advised in a former calendar for the repotted deciduous Calanthes. Place the Lycastes at the warmer end of the house, and sponge the leaves frequently.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Plants for House Decoration.—No plants so well withstand the adverse conditions to which they are exposed in dwelling-rooms as the Aspidistras, and the large, leathery foliage of well-grown plants renders them very appropriate for decorative purposes, A. lurida variegata being singularly effective. If properly hardened before being placed in the house, these plants are capable of withstanding draughts, confined air, warm places, or cool, and may be used in all these conditions. It is important that the leaves be kept free from dust, alike for the sake of appearance as for the health of the plants themselves. When it becomes necessary to increase the stock, this can be effected by division. Break up the plants and pot up the divisions into small pots, using a compost of leaf soil with a liberal addition of sand. After such treatment the leaves will need to be supported in an upright position with sticks. The best time perhaps to divide the plants would be in the early spring months, but the month of June affords a very good opportunity, as there is now less pressure in the propagating department. When plants have to be grown under cool treatment in an ordinary greenhouse, they do not push latent buds freely, and are a long time in getting established, and attaining a serviceable size. The pace is too slow if a number of plants of various sizes has to be maintained. In a warmer and moister atmosphere also, the leaves will be much finer, and the variegation of the foliage more defined. When thus grown, it is only necessary, when the plants are of the size required, to remove them to a cooler and freer atmosphere, and they will afterwards be quite hard enough for use in the dwelling-house. Aspidistras do not require a large amount of pot room, but good drainage is very important, as the plants need copious supplies of water, and will not succeed if the soil becomes sour. Grow the plants in a light position, and syringe the foliage freely and frequently. A compost of rich loam, leaf soil, and a liberal amount of sand will grow them well.

Pits and Frames.—Most of the bedding plants will have been removed out of doors, and thus ample room will now be afforded for growing Begonias, Celosias, Salvias, Petunias, Acalyphas, etc., all of which will be required during the next few months in the conservatory and plant houses. The pits should be made thoroughly clean, and the walls receive a thin coat of limewash. Let the frames be closed early in the afternoon, and use the syringe freely to create atmospheric moisture.

General remarks.—The main sowing of Cinerarias for flowering in early spring, and also a sowing of herbaceous Calceolarias may now be made. Prick off seedling plants of Cinerarias from earlier sowings, and encourage them to grow quickly. Place the plants in frames facing to the north, and when they have become established remove the lights on fine days.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Early Muscat Grapes.—The dull, cold weather which has prevailed has necessitated the exercise of much care in the matter of ventilation and the employment of more fire heat than is usual, which, in so far as it tends to keep the atmosphere in a dry condition, favours red-spider. The foliage should be frequently examined, and any leaf that is affected with this pest sponged with sulphur and water, or a solution of Gishurst Compound. When the Grapes have passed the stoning stage, the atmospheric temperature at night should be 70 degrees, allowing it to rise 10 to 12 degrees higher during the day. Admit a little air very early in the morning on bright days, and increase the amount in proportion to the power of the sun's rays. In many gardens the cultivator has to utilise the vineries for growing plants, and sometimes these get a little greenfly on them. Such plants, if possible, should be taken out at once, and the vines be given a fumigation with good tobacco paper; not the XL-All Compound, if Muscat of Alexandria is growing in the house, for its use seems to cripple the foliage of this particular variety. If the houses are very low and nearly air-tight, with large squares of glass, it may be necessary to afford the vines a little shade during hot sunshine by throwing a net over the glass, which will prevent injury to the foliage. It is not a wise plan to overcrop Muscat vines, for one perfectly-finished bunch is worth three or four imperfectly-finished one. Over-cropping also weakens the roots and renders the vines more subject to insect pests.

Late Grapes.—The berries on the varieties Lady Downes and Black Alicante usually set very freely, and if they are not thinned out early they soon become completely wedged together; the operation of thinning is thus made much more difficult, and the "bloom" is often rubbed off the berries which are to remain. The bunches will also require to be thinned out when it can be seen by the cultivator which will make the most shapely and even-sized bunches. Lady Downes Seedling frequently produces rather long shoulders, and in some instances these are better cut away. When thinning late Grapes the berries should be left with ample room for swelling, and so that air can get right through the bunches, especially in respect to the variety Lady Downes, which is so subject to scalding. If a "chink" of air is admitted to the house the first thing in the morning, it will be the means of preventing scalding taking place.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Fig Trees.—These trees are very strong growers, and therefore need much regulating at this season. All shoots that have developed to the degree that space will allow should be stopped, especially those that have reached the top of the wall. If these be checked in good time, the flow of sap will become more evenly distributed over the tree. Examine the ties to see if there is room left for the shoots to swell. Tie or nail-in only as many growths as are required to maintain the balance of the tree, and all the laterals may be removed. Apply liquid manure to the roots during the time the fruits are swelling, syringing the trees occasionally with soft water.

Pot Strawberries.—Plants which have been kept for the production of early runners will now be producing them in quantities. Preparation should be made for putting them into suitable pots. They may be layered into 6-inch pots straight away, or into 3-inch pots. Use moderately rich loam, and make this firm. No crocks need be used in the smaller pots. The runners from two rows should be drawn together into one for convenience of watering, leaving every alternate row clear. Secure the layers into the pots by means of wire pegs, which are capable of lasting for many years.

Raspberries.—Thin out whilst still small the growths from each stool, leaving a few of those which are strongest and best placed. On light soils a good watering may be necessary by means of the hose.

Pears.—Thin out these fruits, especially those of very early varieties, such as Beurré Giffard, Citron des Carmes, Doyenné d'Ete, Clapp's Favourite, Jargonelle, and Williams' Bon Chretien. The three varieties mentioned last should be most severely thinned in order to produce good flavoured fruits. Later varieties, such as Ne Plus Meuris, Marie Louise, Emile d'Heyst, Louise Bonne of Jersey, Knight's Monarch, &c., should also be severely thinned. In thinning, let this be done so that the crop will be evenly disposed over all the tree. The strongest shoots may be stopped. Nail in the leaders unless they have filled the available space, when these should also be stopped. Expose the fruits as much as possible to the sun's rays. If the trees have been treated as previously recommended, very little insect life will now be found amongst the foliage. Afford copious supplies of water to trees growing against walls in light soils. Pear trees on light soils very quickly suffer through drought, and therefore need an amount of water even when none is required by trees on clayey loams.

Plums.—Nail or tie-in young growths. Stop the strongest if more shoots are required on extending trees. Stop all the strongest foreright shoots to four or five leaves. Allow the weaker growths to strengthen, and go over the tree again in a fortnight. Keep the trees clear of insects by the frequent use of XL-wash or quassia. Thin out the fruits as early as possible, especially late, large fruiting varieties and all those of the Gage section.

THE APIARY.

By Chloris.

Preparations for the Honey Flow.—Most beekeepers will be weary of waiting for good weather, and this disappointed feeling may lead to failure if not shaken off. The suitable weather will come, then let us be prepared to take full advantage of it. Get the supers fitted, and, in fitting up the sections, wet the joints well with hot water so that they will bend easily without fear of snapping. Use extra thin foundation with a worker base and full sheets. There is no economy in putting up starters, and the sections fitted with them are rarely so well filled as when full sheets are used. To get the bees to take readily to sections, put on crates of shallow frames of drawn-out comb. When the bees are working well in the shallow frames substitute the sections, tightly wedged up in the rack to prevent unnecessary propolising.

Buying Swarms.—Those about to commence beekeeping have probably placed orders with strangers for swarms. Without doubt it is a very good plan to commence with a good swarm rather than to purchase second-hand stocks. The novice has no idea of the dangers of purchasing bees from unknown sources, and so I warn him of one thing, and that is, to have a written guarantee that the bees are from a healthy stock free from that dreaded scourge "Foul Brood." If the vendor will not give the guarantee (written), shun his bees as you would a leper.

Brood Thrown Out.—Many have been alarmed because brood (dead) has been seen on the alighting board. This may have been due to one of two causes, in some few cases, perhaps, to both. The chief cause of dead brood being on the alighting board is lack of sufficient food inside, and may be regarded as a danger signal, and a very reliable one, too, that feeding is necessary at once. Another cause of this is that the brood has been chilled, perhaps by the severe weather, and the dead brood in both cases has been cast out. Even now many colonies need feeding; if they are not fed, they will certainly not be ready to take full advantage of the clover honey flow.

Using the Dummy.—People rarely make as much use of the "dummy" as they might do. When the honey flow has well begun, if the colony only covers, say, six frames, place the empties beyond the dummy, and the colony, feeling crowded, will commence operations above; whereas, if left alone, they would continue to work on the empty frames.

Waxmoth.—Before putting on the shallow frames or sections do not forget to remove all the brace comb, so commonly found on the upper surface of the brood frames. These form the sheltering place of the waxmoth, which works almost as much destruction among bees as does foul brood. Should any larvæ be seen, destroy them. If they disappear in the saw cut, ferret them out with the small blade of the penknife, and, before replacing the quilts, carefully examine them, looking for grubs and chrysalides in their silky cocoons.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Potatos.—The main crop will now be well up, and any sets which have produced many growths should be thinned down to not more than two or three. It is a mistake to allow too much top growth, as the crop under such conditions is never so large or of such good quality, to say nothing of the increased chances of disease in the leaf through overcrowding. Keep the surface of the ground well loosened, and when the Potato haulm has reached a height of 6 inches the plants should be "earthed up" moderately deeply so that the young tubers may not become greened.

Turnips.—Make successional sowings from time to time to maintain the supply, and at this season it is not necessary to sow in large quantities because the roots will soon lose their good qualities during hot weather. Select a piece of ground that is slightly shaded. An excellent position for the purpose is one in an orchard that is cultivated amongst the trees. Here the shade will be likely to keep off the fly and the roots will grow more rapidly, and though not so large they will be juicy and of good quality. Soot and wood ashes should be freely sown with this crop.

Ridge Cucumbers may be planted out. Encourage growth by frequently syringing the plants in the afternoons. Keep the haulm pegged down and regulated as growth proceeds. It is a mistake to let these plants ramble at will, as they are never so fruitful as when the sun has an opportunity of maturing the growth as it is made.

Mulching.—On light soils the mulchings of Peas, Runner Beans, &c., should be attended to without delay, and before the growth suffers from lack of moisture. Rough stable litter is the best material for this purpose, and if neatly put on has not an unsightly appearance. The value of these top-dressings is very apparent by the longer fruiting period of the crop. Peas and Beans require much moisture both on the foliage and at the roots, and if rains are not frequent water should be afforded them.

Cauliflowers.—Plants beginning to show their "curds" require liquid manure. At this season the early varieties are never too large, or too early, therefore they should be helped as far as possible. Continue to plant out all the later varieties as fast as they become fit, and it is well at this season to make sure of a good strong plant that has some vitality in it, rather than those of weak, spindly growth, that are easily lost through hot suns or very dry weather.

French Beans.—Make another sowing of these in the open ground. Those who have not tried the Dwarf Sugar Bean should do so. This is one of the very best for high quality. It is a small variety with narrow and slightly ribbed pods, and crops well. For the general crop, Canadian Wonder is one of the oldest and best varieties, and a heavy cropper. As affording variety in colour the Golden Waxpod should be given a place, the pods have an attractive appearance after cooking.

Beet.—Small sowings of the Globe variety should be made regularly, and quite apart from the main crop, to supply the vegetable in its most tender form for use in the salad bowl. Pull the largest as soon as they are fit, and bury the roots without delay to be used as wanted. If left growing but a few days too long the flesh becomes partly white and hard in texture, and next to useless for the purpose intended.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	June 9	Dutch Gard. Soc. meet.
TUESDAY,	June 12	Roy. Hort. Soc. Coms. meet.
WEDNESDAY,	June 13	Roy. Bot. Soc. Great Exhibition in Regent's Park (3 days). Roy. Cornwall Show at Redruth (2 days).

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—60·3°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, June* 6 (6 P.M.): Max. 67°; Min. 47°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 7 (10 A.M.): Bar., 30.3; Temp., 69°; *Weather*—Bright sunshine.

PROVINCES.—*Wednesday, June* 6 (6 P.M.): Max. 62° North-east England; Min. 53° Portsmouth.

SALES.

TUESDAY—
Eighth Annual Sale of Bedding and Greenhouse Plants, at Mile Ash Nurseries, Duffield Road, Derby, by order of Mr. F. Lewis, by Protheroe & Morris, at 11.30.

WEDNESDAY—
Palms, Plants, Hardy Bulbs, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—
An importation of Cattleya Gigas, Imported and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

British Gardeners' Association.

We continue to watch the progress of this movement with sympathetic interest, believing that it is capable of becoming a means of uplifting the profession, of fostering in gardeners an increased measure of self-respect and of furthering the interests of employers. It must be an advantage to the members of any profession to possess an association of their own, which may be used for purposes that the majority may deem to be best for advancing the general good. Having similar aims, identical interests, and difficulties in common with each other, it must, therefore, be of necessity conducive to general progress if gardeners are banded together in such a manner that those interests may be discussed in the small assemblies in the country and reflected through deputies at headquarters. The opinions of all can thus be heard, and the influence, help, and advice of the best and strongest can be afforded to those in less fortunate circumstances.

Co-operation in such matters is not destructive of personal responsibility nor of individual ambition, but, on the contrary, its influence will be to develop those qualities. Membership of an association implies the recognition of the wholesome truth that man does not live for himself alone, and that it is his duty to assist others, as it is his privilege to receive help from them, and that whilst he enjoys individual freedom he should so exercise it as not to injure the interests of his neighbour. The gardener who, as an isolated unit, discharges his duties conscientiously, and who recognises his obligations to his profession, will do so with increased fervour directly he feels himself in unison with others who are actuated with equally high principles. Even those who before were apt to be more or less indifferent in such matters are likely to be influenced by the spirit animating those who have more progressive sympathies. Therefore we may say that the registration of gardeners in an association is commendable. Probably most of our readers will grant this, but may still find room for difference in considering what objects the association should set itself to promote. If this be the case, it will be well for them to turn to another page where the objects which the association has at present in view are enumerated. If they examine these we believe that it will be found that they are of a perfectly legitimate nature. They are matters that closely affect every gardener. The improvement of the general and material welfare of its members, in the endeavour to secure reasonable conditions of employment is a perfectly justifiable aspiration so long as the means employed towards this end are conceived with due respect for the rights of others and for the interests of employers. We have stated again and again in these columns that, with few exceptions, gardeners are not, in our opinion, remunerated so liberally or so generally respected as their services to their employers and the general public entitle them to be. The gardener's course of training is long; his experience has to be gained in various places and at considerable expense. The discharge of his duties necessitates the exercise of conspicuous intelligence and unusual forethought, but his wages are generally less than those of a mechanic, from whom much less is expected, whilst in some cases that are occasionally brought to our knowledge they are less even than those given to unskilled labourers in our own cities. There are other matters also that need to be given more liberal consideration at the hands of employers, such as that of housing accommodation, and the means of obtaining recreation and study. In many instances the head gardener has to live in a house that is not nearly what it should be, and, even more commonly, the bothies provided for the younger men are too small, ill-ventilated, and lacking in details that nowadays are recognised as necessary to health.

We have no sympathy with the man who is a mere time-server, and who, having one eye, as it were, on the clock during the time he is engaged at his work, is afraid lest he should continue to work for a few minutes after the recognised hour. Nevertheless, a due amount of recreation is essential for the proper development of every mind, and gardeners, no less than other men, are entitled to have some time in which they may turn from the subjects that usually claim their attention. No one is the better for indulging in idleness, but all may obtain good from a proper amount of suitable recreation. There are cases in which the young gardener who seeks to carry out a system of study must do so, not only after his day's work is done, but after several hours unpaid overtime are also gone through, and when he is consequently in such a condition as to be unable to study with any degree of comfort or success. In all these matters the British Gardeners' Association has every right to bring its influence to bear on those employers who, from thoughtlessness rather than from intent, have overlooked the legitimate needs of those under them.

In advising the rank and file to obtain a satisfactory agreement with their employers at the beginning of their employment, the association will save both employer and employed much after-trouble and probable disappointment as our own correspondence column bears ample testimony. It will, we hope, befriend the journeyman seeking to enlarge his experience by moving to another locality, and afford similar aid to the foreman or head gardener who is seeking a situation, or who for some reason wishes to make a change.

In regard to the number of hours a gardener should work, and the amount of wages he should receive, the association does not attempt to make any hard or fast rules, as circumstances vary in each case. It goes no further than to recommend what is considered to be a fair minimum in such matters, but very properly leaves each individual member to exercise his liberty unfettered by rule. The more progressive members need have no fear that this commendable attitude will be unproductive of good. We believe it will in course of time have such an influence on the employer's attitude to his gardener that wages will be raised, and the gardener's status increased; moreover, it is the only policy that is practicable in the circumstances. There can be nothing objectionable in all this, as the fair-minded employer has no more to fear from such an association than a law-abiding citizen has from the policeman.

But the association does not stop here. It requires its members to become efficient in their profession and increasingly efficient. It refuses to enrol those who cannot substantiate their claim to be considered efficient gardeners, and thus provides a medium through which employers may get trustworthy men. As an association which stands for progress it will inspire its members to keep the interests of the profession steadfastly before them, and not only endeavour to increase their own efficiency but to impart instruction on the principles underlying common garden-practices to the young men in their employ in order that the next generation of gardeners shall be more capable than they are themselves. Above all, we believe the association will look to its members to raise the standard of gardeners as high as possible by exercising the qualities of temperance, probity, and straight-forward dealing with those above and below them.

The British Gardeners' Association must represent all that is best in British gardening, its members must be strenuous, and its government, whilst protecting their rights on every occasion possible, must require them to be worthy such protection. It must insist that a gardener, when recommended for appointment, is capable and willing to become a good servant, and it may have to devise means for excluding any who may bring disgrace upon the society. In this way its future will be successful, and its members will gain the esteem of employers and of the public.

At the second annual meeting, which was held last week, the council's report was encouraging, inasmuch as the number of members is now more than 900, its banking account £250, and the rules and recommendations of the executive council, as discussed one by one, were approved by the members present. So long as the society's policy is characterised by the moderation at present exhibited, so long will it be entitled to the respect and sympathy of every gardener and employer. We trust that those who already enjoy the favourable conditions, which it could be hoped were more general, will lend their aid to their less fortunate colleagues, and heartily support the only society that exists for promoting the interests of professional gardeners, and therefore the only one that is capable of speaking for them on any question that may arise.

Our Supplementary Illustration.—An Iris garden for Kew was first suggested and planned by Sir Michael Foster, greatest of Iris fanciers, who himself pegged out the beds on the lawn between the rockery and the Duke of Cambridge's garden-wall. The beds were grouped in the north-east corner of the lawn, and were backed by a belt of Rhododendrons in the hope that these would afford sufficient shelter to permit of the cultivation of the more tender species along with the others. This arrangement, however, did not answer, and the Oncocyclus and other tender sections had to be accommodated elsewhere, leaving the field to the Apogon and Pogoniris sections, which include the humilis, spuria, sibirica, pumila, squalens, germanica, florentina, pallida, and aphylla groups. These now occupy bold beds scattered all over the lawn, a corner of which is shown in the illustration, and they present a most lovely picture when they flower in June. They are easily satisfied in regard to soil, moisture, &c., their worst enemy being a rust fungus (Heterosporium gracile), which disfigures or kills the leaves and affects the general health of the plant. A dressing of lime, or weekly sprayings with Bordeaux mixture for a few weeks after growth begins, serves to keep it in check. Where the space can be afforded for the beds on a lawn there is no more enjoyable feature in a garden than Irises used in the way shown in the illustration. They might occupy the beds in company with other plants that would agree with them. Most of the species grow freely, and to keep the collection within bounds the plants require to be lifted occasionally, and the rhizomes reduced and replanted. Whilst they are not particular as to soil, a chalky loam suits them perfectly, and they are inveterate sun lovers. The Kew collection has "overflowed" to the banks of the lake in the arboretum, where there are now broad stretches of the freest-growing sorts which make a great show every June.

The Gardeners' Royal Benevolent Institution.—We would remind our readers that the 67th anniversary festival dinner in aid of the funds of this institution will take place on Wednesday, June 13, at the Hôtel Métropole, under the presidency of Lord Balfour of Burleigh, K.T. Contributions to be placed on the chairman's list and announced at the dinner will be thankfully received by Harry J. Veitch, Esq., 34, Redcliffe Gardens, South Kensington (treasurer); Messrs. Glyn, Mills, Currie & Co., 67, Lombard Street, E.C. (bankers); and the secretary, George J. Ingram, at the offices, 175, Victoria Street, Westminster.

German Orchid Society.—The Deutsche Gesellschaft für Orchideen Kunde was inaugurated on May 10. The president is Baron M. Von Fuerstenberg; the general secretary, Dr. Udo Dammer. The subscription is 20 marks (£1), or 10 marks in the case of gardeners. The official publication, the *Orchis*, which we have previously mentioned, is supplied to members gratuitously or to non-members at 30 marks. The society already numbers 232 members, six of whom are English. The address of the secretary is Herrn Professor Dr. Udo Dammer, Dahlem, Gross-Lichterfelde III. Altensteinstr, 37.

Forestry Instruction at Armstrong College, Newcastle-upon-Tyne.—An important advance in the development of the forestry branch of Armstrong College has been made by an agreement effected between H.M. Office of Woods and the College authorities, by which the latter take over the local management of Chopwell Woods, in the County of Durham. These woods are within a few miles of the College, extend over an area of nearly 900 acres, and carry crops of Larch, Spruce, Scotch Pine, Oak, Ash, and other trees, most of which were planted about fifty years ago. The woods will be gradually brought under a proper rotation of cropping by the clearing and replanting of the more mature portions from time to time, and the carrying out of this work will afford favourable opportunities for demonstrating the various operations relating to practical forestry. H.M. Commissioner of Woods, J. F. F. Horner, Esq., has obtained the consent of the Treasury to a house being provided in the woods as a residence for the College Lecturer in Forestry, Mr. A. C. Forbes, and to continue to pay as heretofore the ordinary working expenses of the woods. The arrangement will facilitate the holding of short courses for practical foresters, and others desirous of acquiring a knowledge of the subject; while as a practical demonstration area for the students attending the College forestry class, the woods will be invaluable, and should render Newcastle one of the most favourable centres for forestry instruction in the United Kingdom. Throughout the negotiations the College authorities have been met by the Office of Woods in a sympathetic manner, and Mr. Horner has shown every desire that the Chopwell Woods shall, so far as circumstances will admit, be so managed as to render increased facilities for instructional purposes.

Small Holdings.—The Departmental Committee held a sitting on the 17th ult. Evidence was given by Miss L. Jebb, Whitemore, Shropshire, Mr. Jas. Tomkinson, M.P., Willington Hall, Cheshire, and Mr. Thos. Wright, Duddon, Cheshire. The Committee also held a sitting on the 24th ult. Evidence was given by Mr. D. W. Drummond, Cawdor Estate Office, Carmarthen; Mr. F. Roberts, Aberystwyth, and Mr. A. Murray, I.S.O., Local Government Board (Scotland).

Botanical Portraits.—From the Royal Botanic Gardens, Kew, has been issued a catalogue of portraits of botanists so far as they are exhibited in the museums of the Royal garden. Short biographical notices of the botanists are included, and the publication is so interesting that doubtless a second edition will be called for when the necessary revisions and additions can be made. We find no mention made of a portrait of Walter Fitch, whose services to Kew were so numerous, but possibly it may be included in the series that is not exhibited. John Sims, former editor of the *Botanical Magazine*, graduated in Edinburgh, as here stated in 1774, although we are told he was not born till 1792. A reference to the *Biographical Index of British and Irish Botanists*, of Britten and Boulger, shows that Sims was born in 1749 and died in 1831, not in 1838 as stated in the Kew list. The wording of the paragraph relating to John Sims also leaves it doubtful whether it was John Sims or his father, Dr. R. C. Sims, who was a member of the Society of Friends, and medical writer. Probably the remark would apply both to the father and to his son. David Douglas finds a place, but Berthold Seemann, Cuming, Miers, Robert Fortune, Thwaites, and Hartweg do not. Here again it may be that the portraits of these worthies are relegated to portfolios, and are not exhibited. In the account of Lindley it is not stated clearly whether it was the father or the son that was educated at Norwich Grammar School, though, of course, the presumption is that the son is the person intended. It is strange that no mention is made of Lindley's *Works on Orchidaceæ*, the works which, of all his very numerous publications, have the greatest permanent value. As we have said, the present instalment is so interesting that we trust it may not be long before a more complete list may be issued.

Botanical Magazine.—The June number contains descriptions and coloured illustrations of the following plants:—

Magnolia hypoleuca (*Siebold & Zuccarini*), tab. 8,077.—A species with large, obovate deciduous leaves, flowers yellowish, filaments deep pink. It was noticed in our columns by Mr. E. H. Wilson at p. 234 of our present volume. It is found wild in Japan, but in China it is met with near houses. It first flowered in this country at Kew in June, 1905, and in Mr. Chambers' garden at Haslemere in the same month, though it had produced flowers in the United States two years previously. It is in cultivation in Messrs. Veitch's nursery at Coombe Wood. The description is by Mr. S. A. Skan.

Gonioscypha eucomoides (*Baker*), tab. 8,078.—This Himalayan Liliaceous plant has exactly the habit of a Eucomis. See *Gardeners' Chronicle*, December 19, 1896, p. 748, fig. 129. Described by Dr. Stapf.

Gerbera aurantiaca (*Schulz Bipontinus*), tab. 8,079.—A very handsome Natal Composite closely allied to G. Jamesoni, but, according to Mr. N. E. Brown, differing in its entire leaves and its deep red ray florets. It requires greenhouse treatment. Kew.

Gladiolus primulinus (*Baker*) in *Gardeners' Chronicle*, August 2, 1890, p. 122, tab. 8,080. See also figure in our number for September 10, 1904, p. 191.—A native of tropical Africa, with self-coloured primrose yellow flowers, here described by Mr. C. H. Wright. It grows in the wettest parts near the Victoria Falls, where it is subjected to a perpetual deluge. The upper perianth-lobes form a hood to protect the stamens and pistil from the excessive rain. Kew.

Rhododendron Vaseyi (*A. Gray*), tab. 8,081.—A native of North and of South Carolina, totally different from all the other American Rhododendrons, but having much in common with species confined to Japan. See *Gardeners' Chronicle*, July 18, 1896, p. 71, fig. 14. Hardy at Kew where, according to Mr. Skan, who furnishes the description, it flowers in May.

L'Horticulture Florissante et Feconde.—M. Charles Baltet has lately published a brochure dealing with the progress of horticulture in France and in other countries, with special reference to the aid afforded by the State as distinguished from private enterprises. In France and Belgium, as is well known, the Governments encourage and assist scientific and economic cultures, whereas in Great Britain and her Colonies only a few Botanic and Agricultural Colleges receive State support, all the societies being self-supporting. For details, carefully collected by M. Baltet, we must refer our readers to his pamphlet, which is obtainable from the Librairie Agricole, Rue Jacob, 26, Paris.

"Familiar Trees."—In spite of the adjective here employed we are told in the prospectus that to most of us a "tree is a tree," and that "we cannot distinguish between the Larch and the Sycamore, nor tell a Cedar of Lebanon from the Yew." It is scarcely likely that the readers of the *Gardeners' Chronicle* are included in the "we," or if that be the case the trees cannot be said to be "familiar." It is not necessary, however, to stickle over names. The fact remains that Prof. Boulger is about to issue through Messrs. Cassell a book on our commoner trees, illustrated by drawings by Messrs. W. H. Boot and A. F. Muckley. The names alone furnish a guarantee that a very useful book for popular consumption will be produced.

Climatic Requirements for Orange-Growing.—Mr. Robert Thomson, Agricultural Instructor in Jamaica, has lately published some interesting facts concerning the climatic conditions most suitable for Orange-growing in the island of Jamaica. He remarks that all the great Orange-growing countries of the world are within the confines of the temperate zones. The cultivation of the fruit on a commercial scale on hot tropical plains, and assisted by systematic irrigation, is a new experiment that has recently been tried with some success in certain districts of Jamaica. But it is feared that after a time the plantations will succumb as previous efforts in this direction have done. In the temperate climate of the mountains of Jamaica, however, the Orange has been naturalised for hundreds of years, but being unable to withstand continuous heat it does not long survive in the hot, dry plains. The wild Oranges on the Manchester hills enjoy a limestone soil and subterranean water. Probably the centre of the zone of spontaneous dispersal of this tree is at a height of about 2,000 feet. It is likely to be proved in the near future, when Orange cultivation assumes important dimensions on the hills, that the upper limit will closely approach the limit of successful coffee cultivation.

Lima Beans.—The beans or seeds of this species, Phaseolus lunatus, are commonly grown for food in America and in the tropics, and they have been introduced here as cattle-food. In this country they rarely ripen their seeds. In spite of the fact that they are extensively used as food both for human beings and for cattle, the seeds are, under certain circumstances, poisonous, and quite recently numerous cases have occurred in Belgium, where cattle have died in numbers in consequence of having partaken of the beans or of the flour made from them. Research has shown that the beans contain, or rather generate, under certain conditions, hydrocyanic (prussic) acid. In the cultivated varieties the proportion of acid is smaller than in the wild or semi-wild plants. The acid is derived from a glucoside discovered by Dunstan & Henry, which under the influence of diastase splits up into glucose, acetone and hydrocyanic acid. The seeds are very varied in color and markings, but all have been found to contain the poisonous substance. In the *Comptes Rendus* for March 5, p. 545, M. Guignard refers to the literature of the subject, and points out the differences between these Lima beans and the ordinary Haricot beans. A microscopic examination shows that the seeds of the common Haricot have always beneath the outer skin a layer of cells, each cell containing a crystal of oxalate of lime. No such crystal exists in the Lima beans. Even cooking does not remove the poisonous element. M. Guignard indicates a ready method of detecting the presence of hydrocyanic acid dependent on the fact that when picric acid and alkalies are added to hydrocyanic acid or any substance containing it a deep red colour ensues. A piece of blotting paper is soaked in a 1 per cent. solution of picric acid. This is allowed to dry, and afterwards steeped in a 10 per cent. solution of carbonate of soda and again dried. The paper has now a yellow tint, and when a slip is introduced into a test-tube containing hydrocyanic acid, the paper is seen to become gradually, and after the lapse of several hours, orange-red and ultimately red. The same results occur when the paper is suspended in a tube containing the crushed beans or the bean-flour and thus exposed to the vapour of the acid. As the seeds are largely used in the United States for food we can only suppose that the poisonous ingredients are not developed in the unripe seeds, or that it is dissipated by heat in the process of cooking. In any case owners of horses and cattle should be careful how they make use of what are variously called Lima beans, Java beans, or Burma beans for feeding their animals.

Charlock.—Mr. Strawson of 71a, Queen Victoria Street, E.C., reports that the heavy loss occasioned by growing a crop of this weed among Corn is fully acknowledged, and is proved in practice to be equal to eight to sixteen bushels per acre. This loss can be avoided and a profit realised by a single spraying in one year; but by repeating the operation for a few years no re-seeding of the land takes place, whilst the old seed in the land is gradually grown out, and the increased annual value of the land becomes permanent. Charlock, like the Turnip, is a cruciferous plant, and such enemies of the Turnip as club-root and Turnip flea-beetle are nourished and perpetuated by the Charlock during the intervals of the Turnip crop, so that the destruction of this noxious weed is all the more desirable. The operation is simple, easy and rapid; the difference in cost between doing it badly and in the best way will not be more than 6d. per acre; but the difference in result will be that in one case only 60 or 70 per cent of the weed will be destroyed, whilst in the other the whole of it will be killed except perhaps a few straggling plants. The spraying should be done when the crop is dry, and some few hours before rain. The spray should be fine and misty, and the simple directions carried out. The following statements are fully confirmed by wide practice, and may be relied upon:—1. That young Charlock can be destroyed in growing Corn crops without injury to the latter by spraying with 50 gallons of 3 per cent. solution of copper sulphate (15 lbs. to 50 gallons) per statute acre, and older Charlock with a stronger solution. 2. That the Corn crops are much improved, and give a better yield, where the Charlock is destroyed, and that young grass seeds and Clover in the Corn remain uninjured. 3. That spraying early, when the weed is young and in soft fibre, is most profitable (but it can be quite successfully done just as the weed is coming into flower, or when in flower). 4. That the larger machines are more successful than the smaller. 5. That the profit derived from increased yield of Corn is diminished in proportion to the delay which occurs after the Charlock is first fit to spray. 6. That the increased yield of Corn, by the destruction of the Charlock, leaves a substantial profit after all the expenses of spraying have been defrayed, and that the value of all Charlock-infested land increases until the extermination of the weed is complete.

The Supply of Nitrogen.—The International Congress of Applied Chemistry had a most successful meeting in Rome from April 26 to May 5 last. According to a recent issue of *Nature*, among the papers contributed the most important was undoubtedly Dr. Adolph Frank's description of his process for the direct utilisation of the nitrogen of the atmosphere for the production of artificial manure and other chemical products. Dr. Frank's invention is not only ingenious, but its effects on the future of the human race will probably be of the greatest importance. The inventor is a veteran in agricultural chemistry; he it was who, more than 50 years ago, introduced the potash salts of Stassfurt to the notice of agriculturists. Now nearly three million tons of these salts are used annually by agriculturists all over the world. As regards the fixation of atmospheric nitrogen, the invention is not a complicated one. Calcium carbide is first produced and then heated with nitrogen obtained by the fractional distillation of liquid air. The first raw material obtained is calcium cyanimide, and it is this that is used as a nitrogenous manure, numerous experiments having shown that the nitrogen which it contains can be easily assimilated by plants. For countries such as Italy, and more especially India, with large agricultural populations which do not possess sufficient cattle to supply the requisite nitrogenous manure, this direct utilisation of the inexhaustible nitrogen of the atmosphere cannot fail to be of enormous importance.

Protection from Mosquitos.—A personal narrative in the Barbados *Agricultural News* details a crusade against mosquitos that has so far proved successful. All stagnant rain-water, ponds and other supplies were emptied every night or kept closely covered according to circumstances, and, where necessary, fresh water was substituted in the morning. A well, which could not be emptied, was treated with half-a-pint of kerosene thrown down it once a month, and this destroyed all insect life there. Water for domestic use was kept in covered reservoirs, and diluted citronella oil and muslin blinds kept any stray pests from entering the house. The writer soon found no mosquitos where they had formerly been somewhat abundant, while fever was also successfully kept at bay.

The Engkala Fruit.—Mr. H. N. Ridley, in the *Agricultural Bulletin of the Straits Settlements*, gives an account of the Engkala fruit, which is, he says, well known by Dyaks and Europeans in Sarawak, but is, apparently, unfamiliar elsewhere. The fruit is that of a new species of Litsea (Lauraceæ), described by Mr. Ridley as Litsea persella, a tree of large size, 40 to 60 feet high, with a stout stem. The fruit is borne in a green cup, 1¼ inches across and shallow, with a thickened obconic base an inch long. Fruit globose, with slightly flattened top, 1½ inches through, smooth, shining red, pulp thick, fleshy, green. Seed rounded-flattened, nearly an inch through, shining pale brown. The flavour is said to be delicious, and the fruit is to be eaten raw or used in curries. The tree may be planted for beauty as well as for utility, as it has handsome foliage, and bears an abundance of yellow blossoms in its season.

Periodicity in the Yield of Wheat.—At a meeting of the Royal Society, held recently, a paper was read by Dr. W. N. Shaw, Director of the Meteorological Office, entitled "An Apparent Periodicity in the Yield of Wheat for Eastern England, 1885-1905." The conclusions as to the relation between the weather and the growth and yield of the cereal crops in this country pointed conclusively to the existence of an intimate relation between the rainfall of the autumn months and the wheat-harvest of the following year. From the evidence before him Dr. Shaw had been enabled to predict the amount of the wheat crop in a particular year in the Eastern Counties with almost absolute accuracy. Dealing with the statistics for the 21 years 1885 to 1905, in the middle of the period there was one year, 1895, with a deficient yield, followed by another year, 1896, with an abundant harvest, a mean of the two corresponding very closely with the average for the whole 21 years. Regarding this central two-year period as the standpoint, he found that, taking all pairs of years distant by two from the standpoint, a deficiency in the one year was compensated for by an excess in the other. Thus, in 1893, distant by two from 1895, there was a deficiency, while in 1898, distant by two from 1896, there was an excess, a similar compensatory result being shown by the years 1891 and 1900, and, in fact, throughout the entire series of years. A result even more remarkable is shown in an apparent periodicity of 11 years in the yield of wheat, not always as regards actual bulk, but certainly in relation to the average. Thus, in 1885 and 11 years later, in 1896, the yield was above the average; in 1886 and 1897 it was deficient; in 1887 and 1898, and again in 1888 and 1899, it was abundant, and so on, without a single exception throughout the whole 21 years dealt with in the discussion. Unless the 11-year rule breaks down, the yield of wheat this year in the eastern counties should be below the average. It is much to be wished that some competent statistician would deal in a similar way with our Fruit Crop reports from every county in the United Kingdom for nearly 40 years.

Dublin Seed and Nursery Employees' Association.—The following directions relating to the competitions organised by this society have been issued; the prizes are offered by Messrs. H. Drummond, D. McLeod, R. T. Robertson, A. J. Sinclair, Alexander Dickson & Sons, and J. Egan, Esq., the president. The hon. secretary, to whom all enquiries should be addressed, is J. J. McDonough, 23, Upper Sackville Street, Dublin:—Competition No. 1. For the best essay on Grasses and Clovers suitable for meadow and pasture-lands in Ireland, their different origins, agricultural values, periods of duration, and the classes of soils to which they are specially adapted. Essay to be limited to 5,000 words (about 12 pages of foolscap), pages taken for diagrams, etc., to be extra; to be written on one side of paper only. When information is taken from a book, the authority to be mentioned. Illustrations, specimens, &c., only to count when they really illustrate some point of importance in the essay. Professor Wilson, Royal College of Science, and D. Houston, Esq., have kindly consented to adjudicate on the same. All papers must be sent in to the hon. secretary by October 1.—Competition No. 2. The Narcissus, an essay. Essay not to contain more than 2,000 words; to be written on one side of paper only; and the competition to be open to senior and junior members alike. James Robertson, Esq., J.P., has kindly consented to adjudicate, and his award shall be final. The competition will close on October 1, 1906, and the papers must be in the hands of the hon. secretary by that date.—Competition No. 3. Prizes are offered for the best collection of mounted specimens (with examples of their seeds) of the genera Medicago, Melilotus, Trifolium, Lotus, and Anthyllis, indigenous to, or naturalised in, Ireland. Both plants and seeds must be collected in Ireland during 1906. Plants must be mounted on paper 17½ × 11½-in., together with samples of the seeds. The botanical and common name, locality, habitat, and date must be written on each sheet. R. Lloyd Praeger, Esq., and Miss Knowles have again kindly consented to adjudicate, and their decision will be accepted as final. Marks will be given on the following basis; Correctness of nomenclature, 20 marks; drying and mounting, 20 marks; excellence of specimens, 20 marks. One mark will be added for each variety of plant and for each specimen of seed sent in. All collections to be sent in to the hon. secretary, on or before October 1 next. Botanical mounting paper will be supplied on application.—Competition No. 4. These prizes are offered in connection with the Botany Class, 1906, under D. Houston, Esq,, details of which will be announced later on.—Excursions. The following outings have been arranged for: June 9 (Saturday), Rhododendrons, Howth Castle, by kind permission of Lord Howth; July 14 (Saturday), Brennanstown Gardens, Cabinteely, by kind permission of Mrs. Pim; August 11 (Saturday), Luttrellstown, Clonsilla Gardens and Grounds, by kind permission of The Hon. Mrs. Barton.

The Fruit Prospect in Germany.—The German Pomological Society has lately issued a report of the prospects of this season's fruit crop collected from no fewer than 760 districts of Germany. The result is that the show of blossom is stated to be better than it has been for many years. An excellent crop is anticipated, provided that the night frosts, which have been exceptionally severe in South and Central Germany, have not done so much damage as it is feared they may have done. The society does much to regulate the market-price of fruit, and is prepared to introduce purchasers to those growers who have the greatest quantity of fruit ready at the beginning of the harvest. All communications are to be addressed: president, German Pomological Society, Alwin Lorgus, 23, Klosterweg, Eisenach.

Photographs of Flowers.—An exhibition of photographs of flowers and of domestic pets by Mr. Henry Stevens, the well-known auctioneer of Covent Garden, was opened at the offices of the *British Journal of Photography*, 24, Wellington Street, Strand, W.C., on Thursday, June 7, and will remain open until July 21. Admission free on presentation of card.

Dr. William Fream.—The death of this well-known agricultural teacher is announced. He was appointed early in life to a professorship in the Agricultural College at Cirencester, and afterwards lectured at Guy's Hospital and at the Agricultural College at Downton. Of late years he has acted as agricultural correspondent for the *Times*. His *Elements of Agriculture* is a most useful book, and his digest on the Rothamsted experiments, published in 1888, is most serviceable to those unable to make use of the very voluminous publications of Lawes and Gilbert.

The Function of Silica in the Nutrition of Cereals.—Messrs. A. D. Hall and C. D. T. Morison contribute a paper on this subject to the current issue of the *Proceedings of the Royal Society*. The investigations of the authors lead them to the conclusions that (1) silica, though not an essential constituent of plant food, does play a part in the nutrition of cereal plants, like Barley, which contain normally a considerable proportion of silica in their ash; (2) the effect of a free supply of soluble silica manifests itself in an increased and earlier formation of grain, and is thus similar to the effect of phosphoric acid; (3) the silica acts by causing an increased assimilation of phosphoric acid by the plant, to which phosphoric acid the observed effects are due. There is no evidence that the silica within the plant causes a more thorough utilisation of the phosphoric acid that has already been assimilated, or itself promotes the migration of food materials from the straw to the grain. (4) The seat of the action is within the plant, and not in the soil.

London and South-Western Railway Guide.—We have received a copy of the Illustrated Guide published by the London and South-Western Railway Co., and dealing with the many charming resorts accessible by their line. Prominence is, of course, given to inland and to seaside holiday haunts, and there are pretty little pictures of the most charming of these. Maps further elucidate the way about the districts under discussion, coach and steamer routes are indicated, and the intending traveller is shown how to visit the Channel Islands and the French Coast. Mr, Perkins edits this book, which is an eighth edition brought up to date. As the pages include lists of hotels, boarding houses, apartments, and business houses, they should prove of great use to visitors to any part of the large and varied districts under discussion.

Show at Regent's Park.—The Royal Botanic Society will hold its great summer show on June 13, 14, and 15, in the society's gardens, at Regent's Park. The exhibition will be opened on the 13th inst. by H.R.H. Princess Alexander of Teck.

Edouard Van der Cruyssen.—The death of this famous raiser of Azaleas is announced. He was born in Ghent in 1819, and died on May 7 last. His most famous production, perhaps, was the Azalea known as Mme. Van der Cruyssen, but the number of his seedlings was very great, and their quality in proportion. Three years ago the Chambre Syndicale awarded him a special medal in recognition of the services he had rendered to horticulture, and his funeral was made the occasion of a striking tribute to his memory, as mentioned in the current number of the *Revue de l'Horticulture Belge*.

Neill Prize.—This prize, which is provided by the proceeds of a bequest by the late Dr. Patrick Neill, one of the first secretaries of the Royal Caledonian Horticultural Society, was on Wednesday, 6th inst., unanimously awarded by the council of that society to James Whytock, gardener to the Duke of Buccleuch, at Dalkeith Palace. The value of the prize is about £30, of which £10 has to be spent on plate or books to bear a suitable inscription.

Flowers in Season.—From Lord Kesteven come flowers of Cornus florida, a tree which Prof. Sargent describes as "one of the most beautiful of the small trees of the American forest, which it enlivens in early spring with the whiteness of its floral leaves, and in autumn with the splendour of its foliage and the brilliancy of its fruit." It is a very old inhabitant of our gardens, though rarely met with. Cornus Nuttalli is very similar, but has rose-coloured bracts. It is a native of the Pacific States of the North American Continent, along the coast range from the Fraser River to the San Bernandino Mountains. The flower clusters of this species are more beautiful and conspicuous than the flowers of any other tree of the Pacific States, and in early spring, when the great flower scales have grown to their full size, it lights up the dark and sombre forests which are the home of the Dogwood as with a bridal wreath, and as with tongues of flame late in the year, when the beauty of the brilliantly coloured leaves and large heads of bright fruit is often heightened by the appearance of autumnal flowers. *Sargent, Silva*, v., tab. 214. C. Nuttalli was one of Douglas' discoveries. The leaves of the two species are very similar, both being shortly stalked, oblong, and tapering at each end.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

The Pine Beetle.—The note in the report of the Royal Horticultural Society's Scientific Committee on p. 333 is misleading as to the treatment to be applied in case of attacks. I never heard of the beetle laying eggs in trees under, say, 30 years old. You could not possibly pull up such trees; in fact, the remarks are self-contradictory, as a tree does not usually show want of vitality when it is young enough to be pulled up. If young plants show want of vitality, it is that they are attacked by fungus or by some insect other than the Pine beetle. Vide p. 237, et. seq., *Manual of Forestry*, Vol. IV., for an account of this insect. *W. R. Fisher, Oxford.*

—— The statement about the Pine beetle mentioned in the report of the Scientific Committee of the Royal Horticultural Society on p. 333 as not attacking healthy trees when there are dead and dying trees near is not borne out here; that is if it is the same beetle. There are thousands of dead tips on healthy Scotch Fir, Corsican and Austrian Pine, and a few Pinus Cembra, and varying in age from a few years to 50 or 60 years. There are many sickly trees nearly dead, and many of the worst have been burnt that were riddled with millions of holes. These holes were, no doubt, the strongholds from which the mature beetles attacked the healthy trees. My acquaintance with them here dates from last September, and from that month to December the ground was strewn with the tips of Pine-shoots that had been eaten nearly through and then blown off by the wind. I have strong reason to believe that the beetle was brought here by an infested tree or two that was brought from a distance, and the trees being half-a-century old their sickly condition favoured the beetles, which multiplied rapidly, and consequently the mature beetles damaged the healthy trees. There is hardly a tree without a few or many dead tips, and I notice dead tips half-a-mile away in very vigorous trees, so it is evidently spreading, and, possibly, unless as recommended by Mr. Saunders, all sickly trees in the locality are burnt, all healthy ones will suffer.

I think it may be, as with the Elm beetle, which does not survive to any extent after the sickly trees have served the beetles' purpose, the Pine beetle fails to establish itself on healthy trees, and as I do not find the Pine beetle in the grub stage on the bark of healthy trees, both must die out, or nearly so, if there are no sickly trees in the neighbourhood. *G. Abbey, Junr., Fanhams Hall Gardens, Ware.*

Gladiolus "tristis."—I send a few blooms of Gladiolus tristis. Though the plant grows as much as 3 feet high, the slender stems are so wiry, that though they may often be seen leaning at an angle of 45° they seldom break. This lovely plant is so easy of culture as to make one wonder why it is not more often grown. The corms annually produce a large number of offsets; these are about the size of No. 4 shot, and average as many as 15 to a corm. Still, the corms are dear. *Arthur Grove, Henley-on-Thames, June 5.* [A nice bunch of these graceful Gladioli accompanied this note. Ed.]

Exhibiting Vegetables.—On p. 333 of your valuable paper Mr. Pritchard gives some "observations on exhibiting vegetables," and recommends 6, 9, and 12 varieties as being most likely to carry points. In none of these does he mention Parsley, and so far as I have seen the "Elstree" collections exhibited, this is always used as a foundation, the other varieties being arranged on the top. If 12 varieties are thus shown—laid on Parsley—does not the presence of the latter make 13? I am quite aware that the Royal Horticultural Society allows Parsley to be used for garnishing vegetables, and rule that it does not in itself carry points; but how does this affect provincial shows? Take a Scottish show—in a collection of 12 varieties, for instance, the exhibitor north of the Border would most likely include a pot or two of Parsley. If it were used as a base, some judges—whose behaviour can never be anticipated—might disqualify it! It is well that the question should be raised, as it is certain to come under the notice of many who are interested in show work, both as exhibitors and judges. *J. A. Simpson, c/o Dobbie & Co., Rothesay.*

Yellow Darwin Tulips.—Surely if what I see by the papers that the two Tulips, Inglescombe Yellow and Walter T. Ware are Darwin Tulips, Bouton d'Or may be also classed under the same heading. My dear friend, the late F. W. Burbidge, wrote me years since saying that the fine old Bouton d'Or was a true Darwin, and I think he was correct. I should like to see flowers of Inglescombe Yellow and Walter T. Ware. The only yellow in the Darwin class that I know of, up to the present, is "Yellow Perfection." It is not a self but a broken flower.—*W. B. Hartland, Ard Cairn, Cork.*

The Borghese Gardens, Rome.—I was interested in reading the article in your issue of May 26th on the Borghese Gardens, Rome, having just visited them, as well as many others of the interesting old gardens of Italy. The original character of the garden in question has undoubtedly been very largely destroyed to make way for imaginary requirements of a modern public garden, and there is really but little of the ancient garden left. With regard however to the erection of the new International Agricultural Institute, I do not think that the municipality contemplates further destruction of the old gardens, as there is abundant space in the unoccupied portions outside, without encroaching further on the gardens proper, and I noticed work now going on in these portions of the gardens which appeared to be in preparation for the institute in question. I quite agree with your correspondent that it would be a great national and world-wide loss to lose more of these fine old gardens. *Joseph Cheal, The Nurseries, Crawley, June 2nd, 1906.*

Flowering Shrubs in the Open-air in Devonshire and Hertfordshire.—The differences in climate in these two counties of southern England were markedly brought out at a recent meeting of the R.H.S. in collections of flowering trees and shrubs exhibited by Messrs. R. Veitch and Son, of Exeter, and by Lord Aldenham's gardener, Mr. Beckett, from Aldenham House gardens, Elstree, respectively. Every species could have been grown successfully in Devon, whilst scarcely any which came from Exeter would have flowered, and some would not have even existed in the Hertfordshire garden it unprotected during an ordinary winter. How wide, then, the reading, and how varied the experience of the gardener who would excel in the cultivation of exotic plants of the open air, even in this small island of ours! Of the Exeter plants I may name Abutilon vitifolium, of which a good bunch of flowering shoots was shown, taken from a specimen that measures 30 feet in height. The flowers are of very light lilac tint, and about 1½ inches in diameter, flattish saucer-shaped, unlike, therefore, any of the species grown in the greenhouse, viz., A. striatum, A. venosum, A. Darwini, &c. The flowers were abundant on the shoots, making the bush a highly ornamental object as a solitary example on the lawn or in the shrubbery. Edwardsia tetraptera McNabiana and E. t. grandiflora, with bright yellow flowers of a slightly different tint were observed in this collection. I believe that these showy plants are sufficiently hardy to flower and grow to a large size in most of the maritime counties of England and south-western Scotland when afforded the protection of a S., W., or E. wall, even in the coldest winter, under a covering of straw mats, and some bracken or straw placed round the root stock. The shoots shown were furnished with a considerable amount of foliage, usually absent at the season of flowering in the colder districts. Some shoots of the splendid scarlet Embothrium coccineum, well furnished with flowers and foliage, attracted the notice of visitors immediately, so vivid was the colour. This Chilian Protead is still uncommon in gardens, and can only be grown with any degree of success in the counties of Cornwall, Devon, Dorset, Isle of Wight, and Hampshire, and does best when afforded wall protection. I have had it in good flower on a northern aspect in Dorset, in a garden about half a mile from the sea. It seeds freely in some places, and the seeds germinate readily, but ordinarily the plant is increased by root cuttings, or by grafting on pieces of its own roots in mild heat. Of species of Rhododendron there were noted flowering shoots of Thomsoni and R. Roylei, of two different shades of crimson, the former having flowers twice as large as those of the latter; R. campylocarpum, with campanulate flowers, 1½ inches wide and deep, and of a pale primrose tint; R. "Coombe Royal," an artificial hybrid, is a showy, pale pink, changing to white as it ages, with the lower segment spotted with crimson. Among other things contained in the collection were Cytisus purpureus incarnatus, with light purple flowers, freely produced on shoots of 12 to 15 inches in length, a distinct-looking ornamental shrub, excellent grown as a bush or standard; and shoots of Citrus trifoliata, sparingly in flower and leafless. Lord Aldenham's exhibits were far more numerous, and I may only make note of the rare species and varieties, viz., Cydonia japonica sinica, having comparatively large flowers of a shade of scarlet; C. Maulei, like the type, a native of Japan; C. J. Mallardi; Pyrus floribunda atrosanguinea, with small, crimson-coloured flowers, which, on small trees in the London district, have been particularly abundant this year; P. Malus "John Downie," a very free, single, white-flowered variety; Lonicera virginalis, a variety of very free-flowering habit, and white; Prunus pseudo-cerasus J. H. Veitch, having semi-double, light pink-coloured blossoms; Exochorda grandiflora, very freely flowered; Amelanchier alnifolia, also very free; Ercilla spicata, having semi-erect, short, axillary spikes of flowers; Acer circinatum, possessing small, crimson flowers in pendulous racemes; and, lastly, Viburnum macrocephalum, having conspicuous corymbs of white flowers, measuring 4 to 6 inches across—a fine solitary bush for lawn decoration. From this list of plants the reader will perceive how abundant is the choice of deciduous shrubs and trees even in the comparatively cold county of Herts, and how delightful a garden may be made in the spring and early summer months with an intelligent selection of species. *F. M.*

The Winter-flowering Carnation Society.—It is a matter for disappointment to those Fellows of the Royal Horticultural Society who helped to build the Vincent Square Hall and offices, that more effort is not made by the council to render that hall the home and place of exhibition of all special horticultural bodies having their shows in London. The newly-formed Winter Carnation Society has, because the offers made by a comparatively poor society (the Royal Botanic) were more liberal, felt compelled to take its first annual exhibition to the Regent's Park next December, greatly to the loss of the Royal Horticultural Society's Fellows. Why the council cannot act as generously to all these respective societies as it does to the Auricula Society seems difficult to understand. The winter Carnation growers do much more to help the Royal Horticultural Society to make its ordinary shows than the Auricula Society does. Surely so wealthy a body as the R.H.S. might strain a point and use every effort to keep in close and parental touch with all these special societies. *D.*

SOCIETIES.

ROYAL HORTICULTURAL.

Colonial Exhibition.

June 6, 7.—The Royal Horticultural Society's list of arrangements for 1906 provide for three exhibitions of Colonial produce, that held on the above dates being the second. The dates for these exhibitions are fixed to correspond with the time when the produce from the respective Colonies are found in the greatest perfection in London. The principal displays were large exhibits of Apples and Pears from Australasia, and Oranges from South Africa. One of the best exhibits was a collection of Apples and Pears displayed by the Agent-General for South Australia. The fruit generally was of splendid quality, and had reached this country in excellent condition. The high colouring of the Apples was a remarkable feature, due, no doubt, to the great amount of sunshine and dry heat that obtains in these Colonies. A very handsome variety is Raspberry Pippin. We may liken it to a large fruit of Fearn's Pippin grown in an orchard house. The flesh is juicy and solid, and the flavour is pleasant. Esopus Spitzenberg is another handsome Apple, more conical than the last-named. Cleopatra is a pretty fruit, smooth, of greenish-yellow colour, somewhat like a large Yellow Ingestre. Other good varieties, from appearances only, are Rome Beauty, Hoover (with very dark red colouring), Maiden's Blush, and King of Tompkins' County. Among the Pears, Uvedale St. Germains, Winter Nelis, and Glout Morceau were easily recognised. Quinces, Pomegranates, Grapes, and bottled and dried fruits completed the exhibit.

The Agent-General for Victoria showed an extensive array of Apples and Pears, as unpacked from the market boxes, tinned and bottled produce, preserves, and wines. The Apples call for especial mention, so fine was their appearance, and we should imagine there would be a good and ready market for fruit of such quality. The dark-skinned Jonathan, Rome Beauty, Munroe's Favourite, French Crab, and Esopus Spitzenberg are among the finer varieties shown.

The display made by the New Zealand Government was a very large and fine one. It consisted principally of Apples, but it also included bottled and canned fruits, jams, sauces, &c. Cox's Orange Pippin was wonderfully large and intensely coloured; Wellington, Ohinemuri (syn. Munroe's Favourite), and many well-known varieties, such as Blue Pearmain, Brownlee's Russet, London or Five-Crowned Pippin, Cornish Gilliflower, and Northern Spy, were in true character as seen in this country.

The Agent-General for New South Wales displayed wines, Apples, dried and candied fruits, jams, Prunes, &c.

Western Australia made an exhibit of grain, wool, honey, wood, hops, &c.

Dr. Benjafield, Hobart, Tasmania, showed many varieties of Apples and Pears grown on standard trees without irrigation.

A large consignment of Oranges, Citrons, and Pomeloes were received from the Transvaal. A new Orange named Transvaal Seedling was of much merit, the skin being thin, and the pulp heavy with juice.

One of the most interesting exhibits from South Africa was a display of Sultanas, Raisins, Currants, Walnuts, and Almonds. The Sultanas and Raisins shown by Mr. J. P. Hamman, Worcester, Cape Colony, were of special quality, and equal to any seen from the European countries. The Nuts were sun-dried, and were crisp and of agreeable flavour.

The West Indian Produce Association, 4, Fenchurch Buildings, London, E.C., showed West Indian fruits and preserves, Limes, sugar, cigars, Tobacco, &c.

The Royal Mail Steam Packet Co. displayed Yams, Pomeloes, Bananas, Soursops, Papaws, &c.

Lady Plowden, Aston Rowant, Wallingford, Oxon (gr. Mr. W. H. Clarke), showed a collection of hothouse fruits: Nectarines, Melons, Strawberries, Lemons, and Tomatos.

Messrs. Dobbie & Co. Rothesay, N.B., showed some good flowers of Aquilegias and Pansies.

Mr. H. B. May, Dyson's Lane Nurseries, Edmonton, had a collection of greenhouse flowers and Ferns.

Messrs. T. Ware, Ltd., Feltham, Middlesex, had a stand of tuberous-rooting Begonias, and vases of Streptocarpus flowers.

Cucumbers at Wisley.

June 5.—Six members of the Fruit and Vegetable Committee, and Mr. C. Bunyard as chairman, visited the Wisley Gardens on the above date to inspect a trial of Cucumbers in one of the low houses. There were 40 plants, and each had a different name, although in several cases no distinction was apparent. The plants were put out on April 12 on mounds of loam 4 feet apart on each side of the house. In almost every case the fruits were at their best a few days earlier, but owing to the Temple Show could not then be seen by the committee. Whilst many of them were fruiting well, the following were specially selected for high commendation or three marks, having previously received awards: Matchless, Every Day, Ideal, Purley Park Hero, Sutton's A1, and Market Favourite. Others almost but not quite so good, were Marvel, Whitelaw's Early, XL-All, and Satisfaction; these had two marks each. Blair's Prolific, a variety having short fruits, was thought to be Lockie's Perfection.

BRITISH GARDENERS' ASSOCIATION.

May 30.—The second annual meeting was held on the above date in the Essex Hall, Essex Street, Strand, London. At the opening of the proceedings there was a goodly company, which was afterwards augmented to over one hundred, including representatives from most of the provincial branches. The Chair was taken by Mr. W. H. Divers, gardener to the Duke of Rutland, Belvoir Castle. The Secretary read the report as follows:—

Report of the Executive Council for the Year 1905-1906.

During the past year the British Gardeners' Association has made steady progress in every direction, and now consists of over 900 trained and qualified Gardeners. It is confidently anticipated that this number will be considerably increased during the ensuing year.

Rules.—The Rules of the Association are now in the hands of every member. Their preparation has occupied considerable attention on the part of the Executive, and every effort has been made to embody in them the general feeling of gardeners in the kingdom.

Certificates.—A Certificate has been issued to each member on payment of the Annual Subscription, and the Executive Council hopes that this Certificate will be regarded as the only badge in the kingdom to distinguish the qualified gardener from untrained or inexperienced men.

The question of issuing a Special Certificate, suitable for framing, has received careful consideration, and the Executive are of opinion that such a document should be issued to each Member of the Association at a nominal charge.

Life Memberships.—It has been suggested that Life Memberships should be created, the basis being a composition equivalent to 21 years' annual subscription. Having considered the matter carefully, the Executive cannot at present advise the adoption of the suggestion.

Provincial Meetings.—The Executive Council think that, in the interests of the Association, it would be advisable to hold meetings in the provinces from time to time.

Apprentices.—Pressure having been brought to bear on the Executive to admit apprentices and journeymen gardeners under the age of 20 years at a reduced fee, they recommend that in future qualified gardeners under 20 years of age be admitted to the Association upon payment of 2s. Registration fee, and an Annual Subscription of 1s., such Annual Subscription to be raised to 2s. 6d. after the 20th birthday.

Exchange or Transfer.—In connection with the subject of Apprentices and Journeymen, the Executive Council express the hope that Head Gardeners may be able to adopt the system of exchange, so that young men may have the opportunity of being transferred from one garden to another without loss of time or money, and thus increase their professional experience.

Situations.—The Executive Council are pleased to say the Association has been instrumental in filling several situations during the past year, and they hope this branch of the Association's business will develop considerably when employers begin to appreciate the advantages of engaging trained and certificated gardeners.

The Executive Council, on the other hand, regret to say that several situations were *not* filled, simply because the wages offered and the terms of service were so far from being in accordance with those recommended by the Association, that they did not feel justified in asking any member to accept a situation that would place him far below the status of the most incompetent labourer.

Applications Declined.—During the past year the Executive Council have been compelled to decline applications for joining the Association from men who were unable to produce satisfactory credentials as to their gardening qualifications. Great care is exercised in regard to the admission of members, as the Executive Council are confident that the success of the Association depends upon the professional ability and good character of each of its members.

The Branches.—The Executive Council wish to express their thanks to the various branches for the good work done during the year. They would also like to impress upon the members the necessity of forming branches in as many centres as possible throughout the kingdom.

Nominations for Executive Council.—The following members are nominated for the Executive Council, viz.:—

Mr. Thomas Bevan, Supt., St. Marylebone Cemetery, East Finchley, N.
Mr. T. H. Candler, Foreman, Warley Place, Great Warley, Essex.
Mr. G. L. Castelton, Supt., Crystal Palace, S.E.
Mr. J. O. Clarke, Head Gardener, The Poplars, 20, Avenue Road, Regent's Park, N.W.
Mr. C. H. Curtis (Sub-Editor *Gardeners' Magazine*), 2, Adelaide Road, Brentford.
Mr. K. Drost, Nurseryman, Richmond, Surrey.
Mr. W. Dallimore, Foreman, Royal Gardens, Kew.
Mr. W. H. Divers, Head Gardener, Belvoir Castle, Grantham.
Mr. Chas. Foster, Hort. Instructor, University College, Reading.
Mr. Jas. Fulton, Head Gardener, Grim's Dyke, Harrow Weald, Middlesex.
Mr. R. J. Frogbrooke, Supt. of Parks, 75, Murchison Road, Leyton, E.
Mr. E. F. Hawes, Supt. Royal Botanic Gardens, Regent's Park, N.W.
Mr. James Lawson, Head Gardener, Horticultural College, Swanley.
Mr. Thomas Lewis, Fair Oak House, Roath Park, Cardiff.
Mr. W. McKechine, Head Gardener, The Gardens, The Mole House, Hersham, Walton-on-Thames.
Mr. R. Hooper Pearson (Sub-Editor *Gardeners' Chronicle*), 40, Brocklebank Road, Wandsworth, S.W.
Mr. G. H. Taverner, Head Gardener, Harrow Weald House, Harrow Weald, Middlesex.
Mr. J. G. Weston, Head Gardener, Eastwell Park, Ashford, Kent.
Mr. Thos. Winter, Supt. of Parks, Marylebone.
Mr. F. T. Woodfield, Head Gardener, The Grange Gardens, North Finchley, N.
Mr. J. Weathers (Hort. Instructor Middlesex County Council), Talbot Villa, Isleworth, W.

Financial Statement.—The following is an account of the Receipts and Expenses of the Association during the past year, with Balance Sheet. It may be mentioned that the cost for printing the Rules, postage, and advertising have been rather heavy, but much of the expense really belongs to the current year, and need not be again incurred.

Receipts.	£	s	d	*Expenses.*	£	s	d
Annual Subscriptions and Registration Fees ...	123	5	6	Advertising ...	16	16	6
Donations	0	15	0	Hire of Hall ...	5	5	0
				Branch Expenses...	5	19	0
				Rent of R. H. S. Room ...	5	0	0
				Legal Expenses ...	3	6	2
				Printing Rules, Stationery, &c....	31	0	6
				Postage of Rules, Typewriting, Rent, Addressing, &c.	32	19	10
					100	7	0
				Balance ...	23	13	0
	£124	0	6		£124	0	6

Balance Sheet.

Liabilities.	£	s	d	*Assets.*	£	s	d
Printing	8	10	0	Cash at Bank ...	61	4	0
				,, on Deposit ...	150	0	0
				Subscriptions unpaid	20	0	0
				Donations promised—			
				Mr. F. Sander	20	0	0
				Mr. R. Sydenham... ...	10	0	0
				Mr. H. J. Cutbush ...	10	10	0
				Mr. R. P. Ker	1	0	0
Balance	273	14	0	Miss Foster ...	10	0	0
	£282	4	0		£282	4	0

By order of the Executive Council.

The Chairman, in his opening remarks, said that, like all other new societies, the British Gardeners' Association had met with much criticism, but it was impossible to please everyone, although much had been done to meet legitimate objections, and there was nothing in the Association's proposals to the prejudice of either employers or employées. The Association wished not only to improve the status of gardeners, but to be able to offer good gardeners to employers. All reforms work slowly, but they had every reason to congratulate themselves on the success which had attended the movement. The membership had increased 50 per cent. during the past year. He referred to the National Union of School Teachers—a flourishing combination; and said that, although that Society was able to proceed but very slowly for some time after its establishment, it now embraced two-thirds of the teachers in this country. He had much pleasure in moving the adoption of the report. Mr. Donoghue (Leeds) fully endorsed the remarks of the Chairman, and predicted a good future for the Association. He was pleased to know from the report that meetings would be held in the provinces. Dr. M. T. Masters, F.R.S., rose to congratulate the members, first on their choice of Chairman in Mr. Divers, and secondly on the success of the movement. That it was spreading was readily apparent, and its steady progress was in its favour. The gardener knows that a Cabbage develops better for growing slowly, and undue haste only causes it to "bolt." He therefore advised the members to go on in their legitimate endeavour to obtain individual freedom, which could be done without injury to others, and to co-operate in their endeavour to obtain remuneration and conditions of labour commensurate with their responsibilities and worth. He wished the movement every success.

The report was carried unanimously. The next business was the consideration of the rules, which we print below as amended at the meeting.

Rules as Adopted at General Meeting.

CHAPTER I.

General and Constitutional.

1.—The Association formed under these Rules, hereinafter called the "Association," shall be known as "The British Gardeners' Association."

2. The Association shall consist of (i) an unlimited number of subscribing members who shall have qualified as professional gardeners in private, public or nursery gardens, or in seed and bulb establishments (see Chap. III.); and (ii) of Honorary Members as admitted under Rule 30.

3.—The general control of the Association shall be vested in the Executive Council, which shall consist of 24 members (including a Chairman, Vice-Chairman, Treasurer, and General Secretary). The Secretary of a Provincial Branch (or an accredited representative of a Provincial Branch) shall be an *ex-officio* member of the Executive Council, and have power to vote.

4.—Eight members of the Executive Council (inclusive of officers) shall form a quorum, and every act, order or decision authorised by these rules to be done, made or come to by the Executive Council, shall be valid if done, made or come to by the said quorum, except in the case mentioned in Rule 40.

5.—After the first Executive Council (elected under these rules) shall have been in office for two years, eight of the members shall then retire annually by rotation, and shall not be eligible for re-election within a period of one year.

6.—The vacant seats on the Executive Council shall be filled at the Annual General Meeting by other members of the Association, each of whom shall have been nominated by at least two members. Such nominations must be sent to the General Secretary at least 28 days before the date of the Annual General Meeting.

7.—The Executive Council shall have power to co-opt eligible members to fill vacancies that may arise before the next Annual General Meeting, subject to confirmation by such Annual General Meeting.

8.—The Annual General Meeting of the Association shall be held about the end of May, or early in June in each year, at a convenient place decided upon by the Executive Council, to receive the Annual Report and Statement of Accounts, and to elect Council and Officers for the ensuing year. A notice convening such Annual General Meeting shall be advertised in the Horticultural Press at least 14 days beforehand.

9.—A Special General Meeting may be called at any time provided a requisition for such meeting be signed by at least 15 members, and forwarded to the General Secretary not less than 28 days prior to the date of such meeting, which shall be convened by him. The requisition must state definitely the nature of the business to be transacted at such Special General Meeting, and no other business shall be transacted thereat.

10.—Provincial Branches shall nominate their Secretary or one of their members annually to represent them on the Executive Council, and all such nominations shall be sent to the General Secretary at least 28 days before the Annual General Meeting. Nevertheless, any member of a Provincial Branch may attend a meeting of the Executive Council on producing the official card of the elected representative of his branch.

11.—Members shall be elected by the Executive Council who shall have power to expel from the Association any member who shall have been convicted of any criminal offence, or who has ceased to be in sympathy with the objects of the Association.

12.—The Executive Council shall determine anything not provided for in these rules, but in no case shall they alter the established rules of the Association without the sanction of a General Meeting.

13.—The Executive Council shall at its first meeting after the Annual General Meeting elect from its own members a Chairman and Vice-Chairman, who shall hold such office for one year only.

14.—The duties of the Chairman of the Executive Council shall be to preside over all its meetings, to sign the confirmed minutes of each meeting, and to see that the business is conducted in conformity with these rules. He shall further, in conjunction with the General Secretary, in any case where time is of importance, have power to appoint special delegations, and in case of such appointment shall report his having done so and the proceedings of such special delegation at the next meeting of the Executive Council.

15.—The Executive Council may at any time request the resignation of its Chairman, Vice-Chairman, or Treasurer, and appoint successors to these offices. It may also dismiss the General Secretary and appoint a Secretary *pro. tem.* in the case mentioned in Rule 41.

16.—The decisions of the Executive Council shall be determined by voting. The Chairman shall have his vote as a member, and if on any question there is an equality of votes, he shall also have a casting vote. The General Secretary, if a paid officer, shall have no vote, but he is hereby empowered to express his opinion as other members.

17.—The Executive Council for the time being shall be the General Trustees of the Association, and all real and personal property of the Association of whatsoever description under the control for the time being of any branch, or officer, or member of a branch of the Association, shall be vested absolutely in the members of the Executive Council for the time being as Trustees for the use and benefit of the whole Association in accordance with these rules and not otherwise.

18.—Any legal proceedings undertaken in the interest or on behalf of the Association shall be brought or defended on behalf of the Association in the names of the members of the Executive Council as such Trustees, and they shall have power to defray the expenses connected with any such proceedings from the funds of the Association, individual members being exempt from any personal liability in this matter.

19.—The decision of the Executive Council shall be absolutely binding on any Branch or Branch Meeting, Committee, Secretary, or Member.

20.—The Executive Council shall meet once a month, but additional meetings may be held whenever the Association's business requires.

21.—The Executive Council shall cause to be printed annually a Report which shall contain such information as to the general state and conduct of the Association as appears to them desirable, and a detailed account of receipts and expenditure of the Association, duly audited, together with a list of the names and addresses of the members of the Association, the addresses of the Branches, and the names and postal addresses of the Branch Secretaries.

22.—The Executive Council may appoint any number of members of the Association to act as delegates, or as a sub-committee, to visit any locality:

(*a*)—For the purpose of assisting or making known the objects of the Association; or

(*b*)—For the purpose of making any enquiries the Executive Council may think desirable.

(*c*)—For the purpose of conducting an Examination in Gardening.

The reasonable expenses of such delegates or sub-committee shall, if necessary, be defrayed by the Association.

CHAPTER II.

Objects of the Asssociation.

23.—The objects for which the Association is established are:—

(*a*) To associate and unite the gardeners of the United Kingdom, and to promote and extend the influence and dignity of the Gardening Profession.

(*b*) To provide means for the co-operation of gardeners, and to ascertain and give expression to their collective opinion upon matters affecting their profession.

(*c*) The registration of the name, age, nationality and professional experiences of qualified gardeners.

(*d*) The exclusion from any participation in the privileges or benefits of the Association of untrained and inexperienced men.

(*e*) The improvement of the general and material welfare of its members by endeavouring to secure reasonable conditions of employment for gardeners.

(*f*) The encouragement of a higher standard of education, and of greater professional efficiency amongst its members.

(*g*) To assist members when out of a situation to obtain another, as far as possible in accordance with their experience and ability.

(*h*) To induce owners of gardens, estates, nurseries, public bodies, &c., to employ members of the Association in all gardening matters.

(*i*) To assist members to obtain compensation for injuries resulting from accidents sustained during employment in connection with their profession, in cases where the Executive Council are fully satisfied that the claim should be supported. Also to furnish advice and legal assistance at the discretion of the Executive Council, in cases of dispute or misunderstanding between employers and employed.

(*j*) To grant Diplomas to successful candidates at any Examination that may be held by the Association.

CHAPTER III.

Qualifications for Membership.

24.—Candidates for membership must have been trained in some branch of gardening, and must be over 20 years of age.

25.—If under 23 years of age a candidate must have had at least five consecutive years' training in private, public, or nursery gardens, or in seed or bulb establishments.

26.—If over 23 years of age a candidate must have had at least seven consecutive years' profesional experience.

27.—In all cases candidates must submit satisfactory testimonials and references as to personal character and competence.

28.—Foreign gardeners employed in the United Kingdom are eligible for membership of the Association.

29.—After a period, to be determined by the Executive Council, candidates for membership under the age of 23 years shall be required to submit to an examination, the form of which shall be first approved by the Association at a General Meeting.

30.—Owners of gardens, and others, not eligible for election as effective members, may, at the discretion of the Executive Council, be elected Honorary Members of the Association. Honorary Members shall not be entitled to vote at any meeting of the Association.

CHAPTER IV.

Registration and Subscription

31.—The entrance or registration fee payable by approved candidates shall be 2/6, and is payable once only, except in the case of a lapsed member who wishes to rejoin the Association.

32.—The annual subscription for each member shall be 2/6, payable on January 1st in each year.

33.—Members elected after October 1st in any year shall pay the registration fee of 2/6, and the first annual

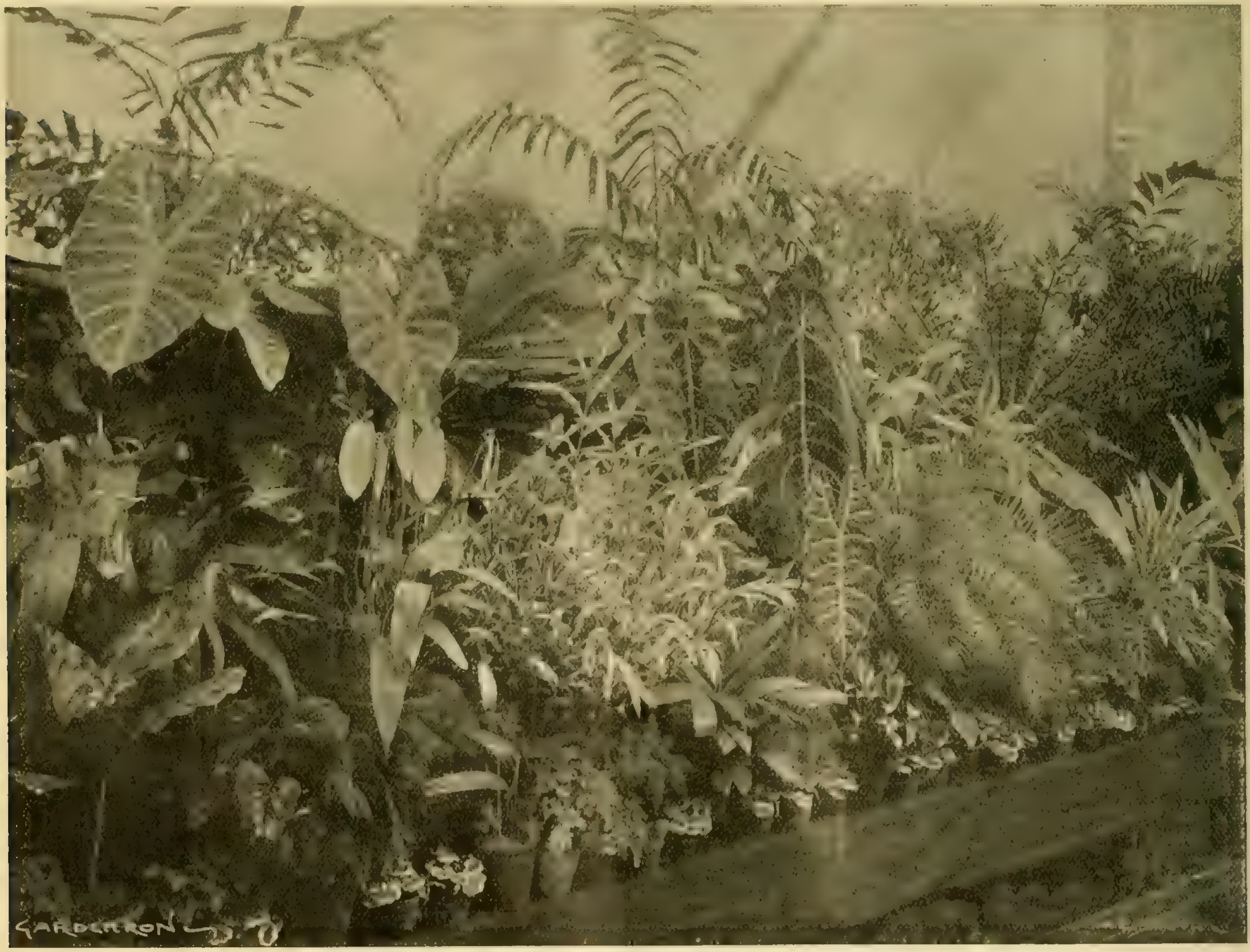


Fig. 150.—The Temple Show.

View of the group of new and rare foliage plants exhibited by Messrs. Sander & Sons.

subscription of 2/6, and shall be entitled to all the privileges of the Association until the end of the following year without further payment.

34.—Each member on election shall receive a copy of the General Rules and a Certificate of Membership. The Certificate of Membership shall be in force for one year only but shall be renewable on January 1st in each year on payment of the annual subscription of 2/6. Nevertheless the Executive Council may in their absolute discretion refuse to receive any subscription or to grant any certificate without assigning any reason.

35.—In the event of a member losing his copy of the General Rules or his Certificate of Membership, he may, at the discretion of the Executive Council, obtain a duplicate on payment of 6d. per copy.

36.—Any subscriptions not paid by the 1st April in each year shall be reported by the General Secretary to the Executive Council as being in arrear. No member whose subscription is in arrear shall be entitled to speak or to vote at any meeting of the Association, nor to exercise any of the privileges of a member.

37.—Any member whose subscription is 12 months in arrear shall, after due notice from the General Secretary, be considered a lapsed member. Such member, however, may, at the discretion of the Executive Council, regain his membership on payment of 2/6 in addition to his arrears and current subscription.

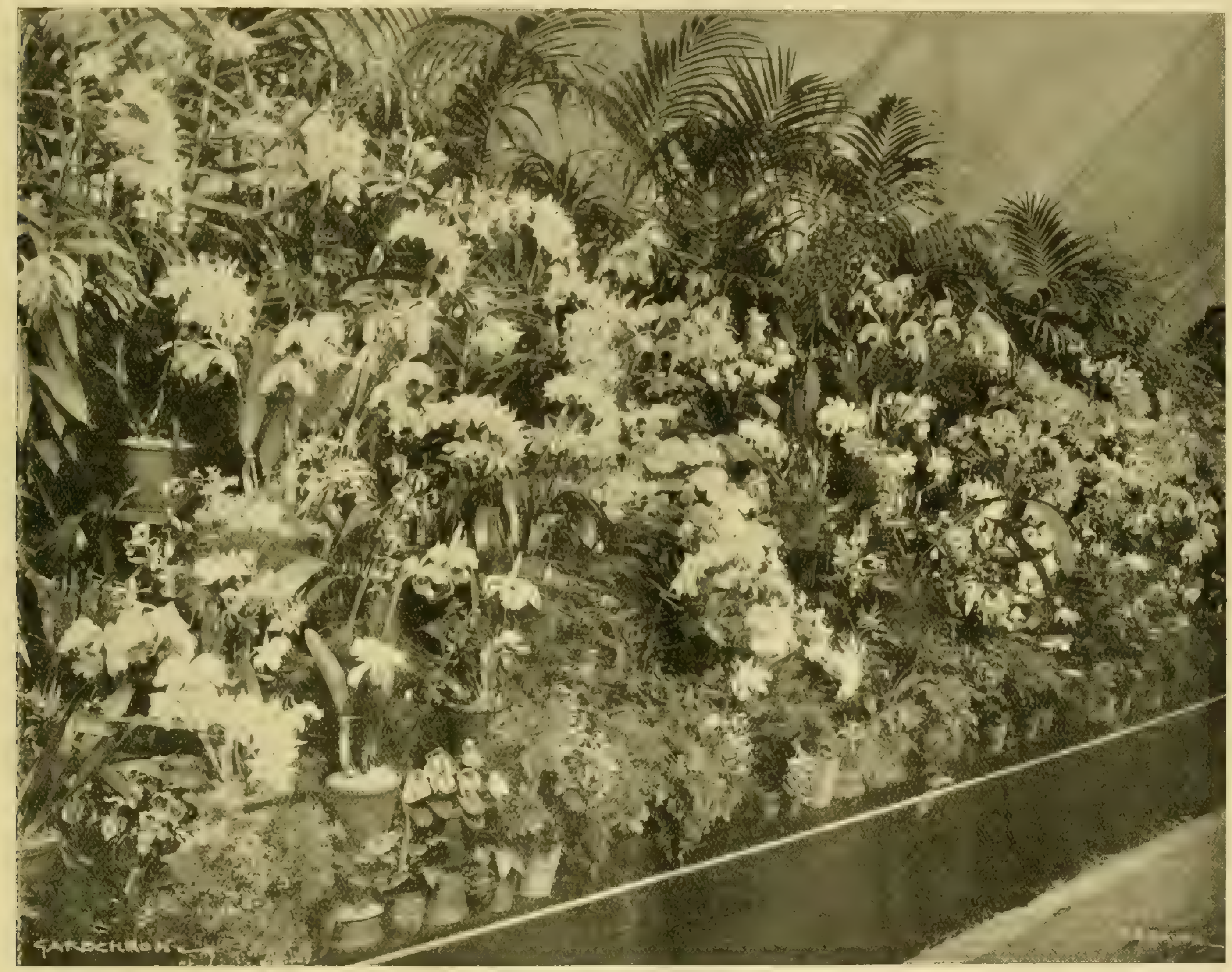


Fig. 151.—THE TEMPLE SHOW.

Messrs. Sander & Son's exhibit of Orchids which, together with that of fine foliage plants (fig. 150), was awarded the Veitchian Cup.

(For details see report in our last issue.)

CHAPTER V.

Duties of Secretary and Treasurer.

38.—The General Secretary shall vacate office each year at the Annual General Meeting, but he shall be eligible for re-election. Nominations for the office of General Secretary must be sent to the Chairman of the Executive Council on or before the first of May in each year.

39.—The General Secretary shall be under the control of and obey the orders of the Executive Council, and he shall receive all Registration Fees and Subscriptions, keep all accounts, documents, books and papers belonging to his office and shall print and distribute the reports in such manner and place as the Executive Council shall direct.

40.—A majority of the Executive Council shall, if the General Secretary has in their opinion wilfully mismanaged or neglected the affairs of the Association, have power to suspend him from his duties.

41.—The Executive Council may, if the General Secretary be proved to its satisfaction to have been guilty of fraud, dismiss him without notice, and in such case he may be proceeded against according to law, or in case of his death or resignation the Executive Council shall appoint any eligible member of the Association to act as General Secretary until the next Annual General meeting of the Association when, if possible, a General Secretary shall be appointed according to these rules.

42.—The General Secretary shall keep a book to be called the "General Registration" Book, in which he shall enter the names of all members of the Association within 28 days from the date of their election, and when and where they were admitted or re-admitted, with a statement of their ages, whether they are married or single, and their qualifications. If any Member be transferred from one branch to another the General Secretary shall enter a memorandum thereof in the General Registration Book and he shall remove therefrom the names of Members leaving the Association. The General Registration Book shall be open for inspection at all reasonable times to any Member of the Association upon his giving 24 hours' notice.

43.—The General Secretary shall attend all meetings of the Executive Council, and shall take minutes of the business thereat transacted. He shall, at all such meetings, have a free expression of opinion, but, if a paid officer, shall not vote. He shall receive all letters and parcels, conduct the correspondence of the Association, and shall have the custody of the books, papers, documents, stationery, &c.

44.—The General Secretary shall produce, when required, all books, papers and documents of every kind belonging to his office, to the Executive Council, and to the auditors.

45.—The General Secretary shall file and keep all notices and documents of any kind sent him by Branch Secretaries or Members. He shall send all books, notices, voting papers, and documents of all kinds, stationery and goods required by these rules to be sent from the general office or the Executive Council to Branch Officers and Members and shall keep accounts thereof to the satisfaction of the Auditors.

46.—The General Secretary shall prepare and submit to the Executive Council for consideration the annual report and shall send to the Secretaries of the Branches the number of copies of the Report they may require.

47.—The Executive Council may, at its discretion, remunerate the General Secretary for services rendered.

48.—The accounts of the Association shall be kept by the Treasurer and General Secretary. The financial year shall end on April 30. All moneys shall be deposited at a Bank to the account of the Association, and payments shall be made by cheque signed by the Chairman, Treasurer, and Secretary. The accounts of the Association shall be audited prior to the Annual General Meeting by two auditors (not members of the Executive Council) appointed at the previous annual meeting, one of whom shall retire annually.

49.—The duties of Treasurer shall be to keep an account of the income and expenditure of the Association, together with the General Secretary, and to submit to the Executive Council at its monthly meetings an interim financial statement together with the pass books of the Association. He shall also give up all books, documents or moneys belonging to the Association when ordered to do so by the Executive Council or by a general meeting. In case of the Treasurer's death or resignation, the Executive Council shall appoint any eligible Member of the Association to act as Treasurer until the next Annual General Meeting of the Association.

CHAPTER VI.

The Branches.

50.—Branches of the Association may be formed in different parts of the Kingdom. Such branches shall hold meetings at least once a quarter at their respective centres, and shall have the power of electing Members and a Branch Secretary, but shall be subject to the control and direction of the Executive Council of the Association.

51.—If any branch, by the action of its officers or by the action of any number of its members, lays claim to the right of ownership or possession of any money or property of any kind whatsoever by these rules vested in the Executive Council, or to which the Executive Council are entitled, or refuses to deliver up or account for the same on demand duly made in that behalf, or determines or attempts to secede from the Association, or acts in any way contrary to these rules, if proved to the satisfaction of the Executive Council, such branch shall be deemed thereby dissolved, and the Executive Council shall at once by any means it thinks fit obtain possession of all the funds, books and every description of property in the hands of the branch, or its members, or officers, or any other person or persons, and deal with such funds, books and property at its discretion.

52.—No branch shall, by the action of its officers or members, dispose of any of the Association's funds otherwise than as is by these rules allowed.

53.—Every act, order or decision authorised by these rules to be done, made, or come to by any branch meeting shall be valid unless and until forbidden, rescinded, or overruled by the Executive Council or a General Meeting of the Association.

54.—Every branch shall hold its meetings at such place as may have been selected by the majority of its members.

55.—All books, stationery, etc., required for branch purposes shall be sent from the general office, on application from the branch Secretary, free of charge.

56.—If any branch or any branch officer receive any circular or address relating to the conduct of the Association or its business, or relating to the conduct of any of its officers or members, the same or a certified copy of it shall be sent within one month to the Executive Council.

57.—All branch officers shall, when ordered by the Executive Council, give up on demand to such person or persons as the Council may appoint, all moneys, books and other property of the Association in their possession.

58.—Any Branch may depute one of its Members to attend the meetings of the Executive Council, according to rule 3.

CHAPTER VII.

Revision or Alteration of the Rules.

59.—No rule of the Association shall be altered, added to or rescinded, and no new rules shall be made except in accordance with Rule 12, or at a General Meeting specially convened for the purpose by the Executive Council.

60.—The General Secretary shall forward to the Secretary of each branch a sufficient number of copies of the amended rules within 21 days after their adoption by a General Meeting of the Association.

Recommendations to Members.

The Executive Council hopes that members will act in the spirit of the Association in the following matters, among others:—

(i) By the careful selection of youths to be admitted as apprentices.

(ii) The affording of every facility possible to Apprentices and Improvers in order to enable them to acquire an intelligent knowledge of the WHY and WHEREFORE of the common methods of garden practice, thus inducing them to take a greater interest in their work.

(iii) That in cases where the decision rests partly or wholly with themselves, head gardeners will not keep more apprentices in proportion to the number of journeymen employed than is conscientiously believed to be for the best interests of the profession.

(iv) To endeavour to obtain proper bothy accommodation for the gardeners under their control if they are expected to live in the garden. In large gardens the bothy should contain a Reading Room, Library, etc., in addition to the conveniences necessary for hygienic purposes.

(v) In regard to wages, the Association recommends that journeymen, 20 years of age and upwards, should receive not less than 18/- per week with bothy, or 21/-without bothy. Foremen in private gardens and small Nurseries, and single-handed gardeners, not less than 24/- with bothy or house, and 27/ without bothy or house. Head gardeners and departmental foremen in Nurseries having assistants under them, 30/- with house, or 35/- without house. The Association recognises that in many private gardens and Nurseries the wages should be, and in some cases are already, very much higher than those mentioned above for head gardeners, and that it is not practicable to obtain uniform wages throughout the country, because the cost of living is very much greater in some localities than in others, and because circumstances may, and do, vary in different establishments.

(vi) In regard to hours of labour, the Association suggests that for under gardeners, 56 hours (exclusive of time allowed for meals) in the summer period (9 months), and 48 hours per week in winter, should be the maximum, and beyond this extra remuneration should be given. Local circumstances, however, vary greatly, and Members whilst endeavouring to carry out the objects of the Association must do so in such a manner as to convince employers, as well as employed, that the Association is not antagonistic to any class, but seeks to serve the interests of all. The Executive rejoices that the Saturday half-holiday for under-gardeners is now observed in many gardens, and all head gardeners who can secure a half-day's relaxation each week or fortnight for their assistants will find that the greater enthusiasm of the men will more than compensate for the time sacrificed.

(vii) By adhering as far as possible to the spirit as well as the letter of these recommendations it is confidently hoped that an improvement may be brought about, not only in respect of hours and wages, and in the house accommodation provided for head gardeners and their subordinates, but also in the skill and qualifications of Members of this Association, thus increasing the effectiveness of those employed, and serving the interests of employers.

(viii) Members when accepting the charge of a garden, whether single-handed or having assistants under them, are strongly recommended to secure a written agreement with their employer providing for not less than a month's notice to be given or received before the termination of such employment. At the present time the Executive Council is aware that the lack of such an agreement is very frequently the cause of disputes that might otherwise have been avoided.

Each clause of the Rules was carefully considered before being accepted by the meeting. A suggestion to remove section (ii) of Rule 2 was negatived by a large majority. Rule 17 was discussed at some length. Mr. W. W. Pettigrew (Cardiff Branch) suggested that the property procured by the branches themselves should be absolutely vested in those branches, and should not revert to the Society in the event of the branch becoming extinct. The rule, however, was allowed to remain, it being pointed out that this was already provided for. Mr. Pettigrew raised a discussion on clause (f) of rule 23. He wished to see the clause so framed as to compel head gardeners and others in similar responsible positions to conduct or cause to be conducted, classes for the benefit of the young gardeners, wherein they might acquire greater professional aptitude and general education.

Mr. R. Hooper Pearson pointed out that in the "Recommendations to members" clause (ii.) the executive council impress upon members the desirability of "affording every facility possible to apprentices and improvers in order to enable them to acquire an intelligent knowledge," &c., but that the council could not embody the proposal in a rule, because the association will not be in a position to compel a member in such a matter. Nevertheless, those members who acted in the spirit of the association would impart instruction to the young men in their charge.

Much discussion centred around clause (i) of Rule 23. Mr. Watson thought it hardly went far enough in its promise of help, and wished to provide legal assistance in all cases of dispute between employer and employé where necessary. Mr. R. Hooper Pearson warned the members that they must not commit themselves at present in this matter, and that legal assistance might be desirable in some cases, but not advisable in view of the present condition of the association and its finances. They had first to consider the interests of the association, that it might eventually become strong enough to effect the good it is not able at present to carry out successfully and safely. Hasty action in such a matter might involve the very existence of the association. Mr. Stocks supported Mr. Watson. He would rather see the society lose its last penny than refuse assistance to a wronged member. A member suggested that the clause should be made to read that the society would provide legal assistance at the discretion of the executive council, and this was adopted by the meeting, Mr. Watson withdrawing his motion.

It was decided (Rule 50) that the branches should hold meetings at least once a quarter. The rest of the rules were embodied without discussion.

Election of Officers.

The number of members of the executive council was raised from 12 to 24. The 21 members

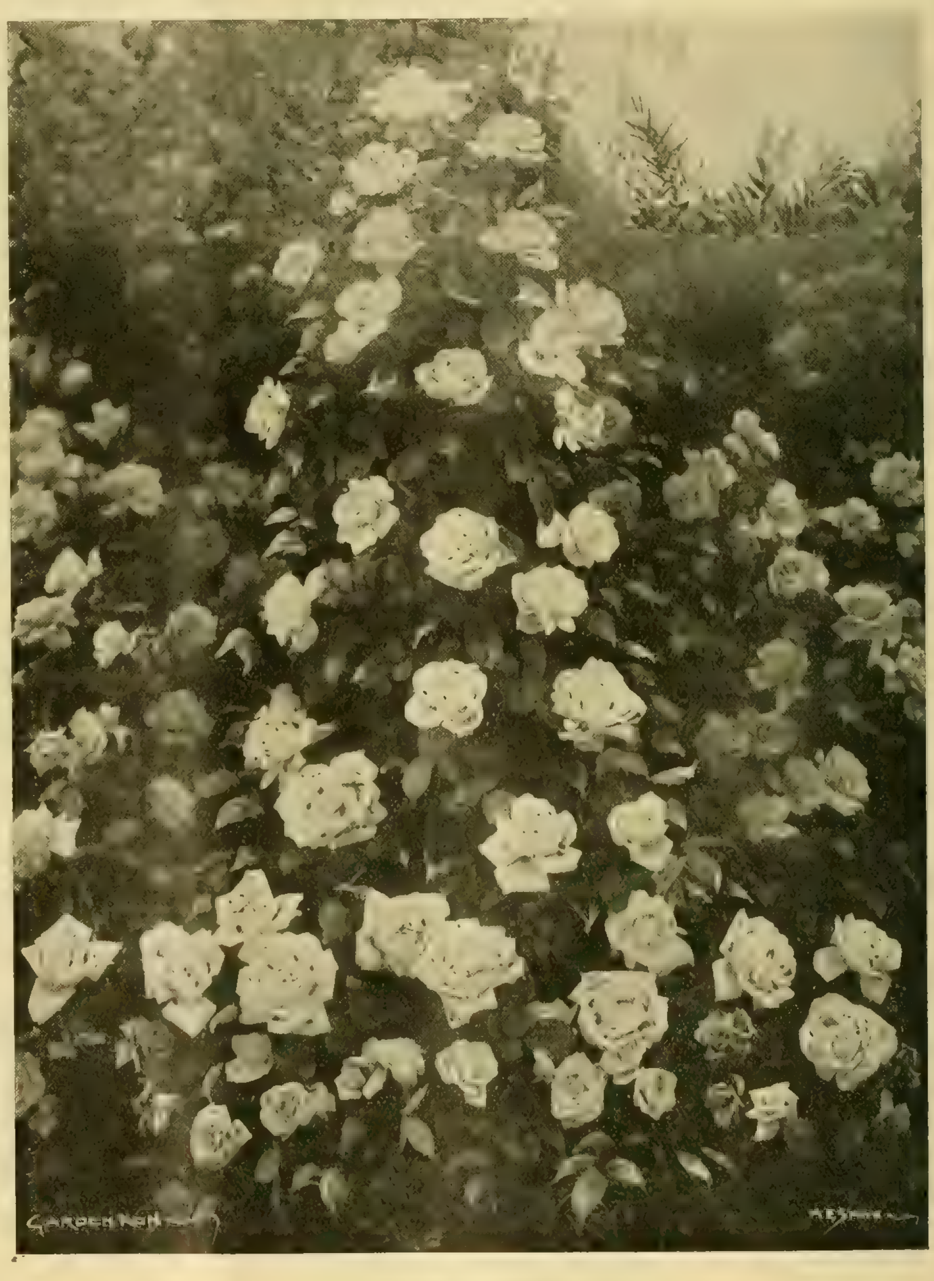


Fig. 152.—THE TEMPLE SHOW.

A Rose pyramid, composed of wondrous blooms of the white Frau Karl Druschki, exhibited by Mr. George Mount.

[See report published in last week's issue.]

proposed by the council (see Report) were elected. The council will co-opt three others. Mr. John Weathers was re-appointed secretary, Mr. E. H. Hawes was appointed treasurer, and Messrs. Dicks and Tinley auditors.

AGRICULTURAL SEED TRADE ASSOCIATION.

May 28.—The annual dinner of the members of this association was held on the above date at the Holborn Restaurant, Mr. Wm. H. Le May (Messrs. W. H. & H. Le May) occupying the chair. The Chairman, in proposing the toast of the evening, "The Agricultural Seed Trade Association," said the association is of great value in settling by arbitration disputes arising from sales by sample. He held the opinion that all seed should be sold by weight, for when it is sold per bale, as is French and Italian Ryegrass, trouble arises. He thought it a matter the association should take up for the convenience of both seller and buyer. Mr. Geo. Sommer replied. He did not know any other questions of so great importance as those of purity and growth. It was a matter to be considered by the association. He supported the proposal to postpone the annual dinner until the time of the Cattle Show week in December.

Mr. Harrison also advocated the changing of the date of the annual dinner to December. He would like to see the Minister of Agriculture approached for assistance in establishing a control station for the United Kingdom. Mr. Herbert Le May proposed the toast of the "Visitors," and in doing so coupled with it the names of Mr. Kenric B. Murray (secretary London Chamber of Commerce), Mr. W. J. Downes, and Mr. Wm. Watson. He fully agreed with the remarks made by Mr. Sommer. He was strongly of opinion that a control station should be established in this country. Why should it be necessary for us to send to Zurich to have our seeds tested? Surely England could do this work itself.

Mr. Kenric B. Murray thanked the members for the cordial reception of the toast. He thought it would be a wise step for the association to adopt some standard of purity and germination.

DUTCH HORTICULTURAL AND BOTANICAL.

May 9.—The committee awarded First-Class Certificates to Cypripedium Powerianum magnificum, from Mr. H. C. Hacke, of Baarn (gr. Mr. Th. Hendriksen), flowers deep red with black stripes, a beautiful form; to Odontoglossum Rolfeæ, from Mr. W. C. Baron van Boetzelaar, at Maartensdijk (gr. Mr. J. B. Gebhard), flowers white with purple spots; to single early Tulip "White Beauty," as a new plant from Mr. J. Witteman, of Hillegom, a fine pure white Tulip, a sport from Pink Beauty; to Cypripedium callosum Sanderae, from Mr. J. H. Tromp Meesters, of Steenwijk (gr. Mr. F. v. d. Brink), flowers white and green, a fine form.

Certificates of Merit were awarded to Renanthera Imschootiana, from Mr. E. v. Nederhasfelt, at Aerdenhout (gr. Mr. J. Draaier), flowers vermilion coloured, butterfly-shaped; to Catasetum Bungerothi, from Mr. P. W. Sutorius, of Baarn (gr. Mr. K. Zimmerman), flowers ivory white, cup-shaped, labellum large.

A Botanical Certificate was granted to Adhatoda vasica (Justicia Adhatoda), as an insufficiently known plant, from Mr. H. D. Willink van Collen, of Breukelen, flowers white; to Odontoglossum crispum unicum, from Mr. P. J. Kikkert, of Haarlem, flowers white with brown spots on two of the three petals.

Certificates of Merit were awarded to Lælio-Cattleya Charlesworthi, from Mr. E. A. Lehman, at Amsterdam (gr. Mr. W. Bosma), flowers light orange with purple labellum; Cypripedium Mr. B. G. v. Tienhoven, from Mr. H. C. Hacke, at Baarn, flowers white with green and red; Cypripedium J. H. Tromp Meester, from Mr. Tromp Meester, at Steenwijk, flowers beautiful, fine white green and dark purple; Exochorda Alberti, as a new plant from the Hortus at Utrecht; Hortulanus Mr. J. K. Budde, a fine hardy shrub, with white flowers; Odontoglossum Rossi majus Eyckestein, from Mr. W. C. Baron van Boekelaar, at Maartensdijk, flowers white with dark brown, a fine form.

MARKETS.

COVENT GARDEN, June 6.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones (pink) doz. bunches	1 6- 3 0	Mignonette, dozen bunches	2 0 3 0
— coronaria varieties	1 6 3 0	Myosotis, per doz. bunches	1 6- 2 0
— fulgens, fl. pl.	3 0 4 0	Narcissus, per dz. bunches	2 0- 3 0
Azalea mollis, doz. bunches	4 0- 6 0	Odontoglossum crispum, per dozen blooms	2 0- 2 6
Calla æthiopica, per dozen	3 0- 5 0	Pæonies, per doz. bunches	4 0- 5 0
Carnations, per dozen blooms, best American various	2 0- 4 0	Pelargoniums, show, per doz. bunches	3 0- 5 0
— smaller do.	1 0- 2 6	— Zonal, double scarlet	5 0- 6 0
— Malmaisons	6 0-10 0	Poppies (Iceland), per doz. bchs.	4 0 -5 0
Cattleyas, per doz. blooms	8 0-12 0	— Oriental, per bunch	0 6- 1 0
Dendrobium Wardianum and nobile, per doz. blooms	2 0- 3 0	Primula, double white, per doz. bunches	5 0- 6 0
Eucharis grandiflora, per doz. blooms	3 0- 4 0	Pyrethrums, dozen bunches	3 0- 6 0
Gardenias, per doz. blooms	1 6- 2 0	Ranunculus, doz. bunches	6 0- 8 0
Gladiolus, Blushing Bride, per dozen bunches	9 0-12 0	Rhodanthe, per dz. bunches	3 0- 4 0
— The Bride	5 0- 9 0	Roses, 12 blooms, Niphetos	1 6- 2 6
Gypsophila elegans, per doz. bunches	3 0- 4 0	— Bridesmaid	2 0- 4 0
Iris germanica, per bunch	0 9- 1 0	— Kaiserin A. Victoria	2 0- 4 0
— Spanish, per doz. bunches	2 0- 3 0	— Caroline Testout	3 0- 5 0
Ixias	2 6- 4 0	— C. Mermet	1 6- 3 0
Lilac, per bunch	1 0- 2 0	— General Jacqueminot	1 0- 2 0
Lilium auratum	2 6- 3 0	— Liberty	2 0 6 0
— candidum, per bunch	1 6- 2 0	— Mad. Carnot	2 6- 3 0
— lancifolium, rubrum and album	1 6- 2 6	— Mad. Chatenay	3 0 6 0
— longiflorum	2 6- 4 0	— Mrs. J. Laing	3 0- 5 0
Lily of the Valley, p. dz. bunches	4 0- 8 0	Stephanotis, per dozen trusses	4 0- 6 0
— extra quality	9 0-12 0	Stocks (double white) per doz. bunches	2 0- 3 0
Marguerites, white, p. dz. bunches	2 0- 3 0	Sweet Peas, per doz. bunches	3 0- 6 0
— yellow, per dz. bunches	2 0- 3 0	Tulips, per dozen bunches	4 0- 8 0
		— special quality	12 0-18 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0	Galax leaves, per doz. bunches	1 6- 2 0
— — medium, bunch	1 6- 2 0	Hardy foliage (various), per dozen bunches	2 6- 4 0
— — short sprays per bunch	0 6- 0 9	Hardy Grasses, per doz. bunches	2 0 3 0
— Sprengeri	0 6 1 0	Ivy-leaves, bronze	1 6- 2 0
Adiantum cuneatum, doz. bun.	4 0- 6 0	— long trails per bundle	1 0- 2 0
Berberis, p. bunch	2 6- 3 0	— short green, doz. bunches	2 0- 3 0
Croton leaves, per bunch	1 0- 1 6	Moss, per gross	5 0- 6 0
Cycas leaves, each	1 6 2 0	Myrtle, per dozen bunches	3 0- 6 0
Fern, English, p. dozen bunches	2 0- 3 0	Smilax, per dozen trails	3 0- 6 0
— French, doz. bunches	3 0- 4 0		

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d
Ampelopsis Veitchii, per dozen	6 0- 8 0	Crotons, per dozen	12 0-30 0
Aralia Sieboldi, per dozen	4 0- 6 0	Cyperus alternifolius, dozen	4 0- 5 0
— larger	12 0-15 0	— laxus, per doz	4 0- 5 0
Araucaria excelsa, per dozen	12 0-30 0	Dracænas, per doz.	9 0-24 0
Aspidistras, green, per dozen	18 0-30 0	Erica Cavendishi, per dozen	24 0-26 0
— variegated, per dozen	24 0-36 0	— candidissima	18 0-24 0
Asparagus plumosus nanus, doz.	9 0-12 0	— persoluta	24 0-30 0
— Sprengeri, doz.	9 0-10 0	— ventricosa magnifica	24 0-42 0
— tenuissimus per dozen	8 0-10 0	Euonymus, per dz	4 0- 9 0
Azaleas, per doz.	18 0-30 0	Ferns, in thumbs, per 100	7 0-10 0
Begonias (tuberous), per dozen	5 0- 8 0	— in small and large 60's	16 0-25 0
Boronia elatior, per dozen	18 0-24 0	— in 48's, per doz.	4 0-10 0
Calceolarias, yellow	4 0- 6 0	— in 32's, per doz.	10 0-18 0
Callas, per dozen	5 0- 8 0	Ficus elastica, p. dz.	9 0-18 0
Chrysanthemum segetum	6 0-10 0	— repens, per doz.	5 0- 8 0
Clematis, per doz.	8 0- 9 0	Fuchsias, per doz.	6 0- 9 0
— in flower	18 0-24 0	Heliotrope, per dz.	6 0- 8 0
Cocos Weddelliana, per dozen	9 0-18 0	Hydrangea Hortensia, per dozen	9 0-24 0
Crassula, hybrid, per doz.	12 0-15 0	— Thos. Hogg	12 0-24 0
		— paniculata	18 0-30 0
		Kentia Belmoreana, per dozen	12 0-18 0
		— Forsteriana, per dozen	12 0-21 0
		Latania borbonica, per dozen	12 0-18 0

Plants in Pots, &c.: Average Wholesale Prices *(Contd.)*

	s.d. s.d.		s.d. s.d
Lilium longiflorum, per dozen	15 0-24 0	Pelargoniums, show	9 0-15 0
— lancifolium, per dozen	18 0-24 0	Petunias, double, per doz.	5 0- 6 0
Lily of the Valley, per dozen	18 0-30 0	— single (in 60's only)	1 6- 2 6
Lobelia	5 0- 6 0	Rhodanthe, per dz.	3 0- 5 0
Marguerites, white, per dozen	6 0-12 0	Rhododendrons, per doz.	18 0-30 0
— yellow	15 0-18 0	Roses, per dozen	12 0-18 0
Mignonette, p. doz.	4 0- 6 0	Saxifraga pyramidalis, per doz.	12 0-18 0
Musk, Harrison's, per doz.	3 0- 5 0	Selaginella, dozen	4 0- 6 0
Pelargoniums (Zonals), per dozen	4 0- 6 0	Spiræa japonica, per dozen	5 0-10 0
— Ivy-leav'd, p.dz.	5 0- 8 0	Verbena, Miss Willmott, per doz.	8 0-12 0

Fruit Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples:—South Australian:		Grapes (English), Muscat, per lb.	2 0- 4 0
— Adams' Pearmain, per case	11 0-13 6	Gooseberries (English), ½ sieve	5 0- 6 0
— Jonathans, per case	13 0-16 0	Lemons:	
— Monro's Favourite, per case	11 0-16 6	— Messina, case	9 0-17 0
— New York Pippins, p. case	12 0-16 6	— Naples, p. case	17 6-25 0
— Rymers, per case	11 0-14 0	Lychees, per box	0 10- 1 0
— Wellingtons, p. case	12 0-14 6	Melons, each	1 0- 2 0
Nova Scotians, per barrel:		Nectarines, English	2 0-12 0
— Ribston Pippin	12 0-13 6	Nuts, Cobnuts, per doz lb.	8 0 —
— Blenheim Pippin	18 6-21 0	— Brazils, new, per cwt.	45 0-48 0
— King of Tompkin's County	25 0 —	— Spanish, per bag	42 0-43 0
Canadian, per barrel:		— Barcelona, per bag	24 6 —
— New York Imperials	25 0-28 0	— Monkey Nuts, per bag	18 0 —
Tasmanian per case:		— Walnuts, dried, cwt.	35 0 —
— Alexanders	11 0-12 0	—Chestnuts, Italian, per bag	13 6-15 0
— Sturmers	11 6-15 0	— Cocoanuts, 100	10 6-13 6
— French Crabs.	11 6-13 0	Oranges, Valentia, per case	18 0-42 0
— Alfristons	11 6-13 0	— Murcia	10 0-16 0
— Sc. Pearmains	13 0-16 0	— Navel	11 0-12 6
— Prince Alfreds	11 0 —	— Jamaica	10 6-11 0
— New York Pippins	12 0-16 0	— Blood	9 6-11 6
— Roman Beauty	11 0-14 6	Peaches (English), per dozen	2 0-12 0
Apricots (French), per box	0 9- 1 6	Pears, stewing varieties, per ½ bushel	2 6- 3 0
Bananas, bunch		— stewing, crate	10 6 —
— No. 1 quality	7 0- 9 0	Tasmanian and Australian Pears, p. tray:	
— No. 2 quality	6 0- 7 0	— Winter Nelis	4 0-10 0
— Extra quality	8 6-10 0	— Glou Morceau	2 6-12 0
— Giants, per bunch	11 0-13 0	— Vicar of Wakefield	2 6- 3 6
— Jamaica	4 6- 6 0	— Bergamotte	2 6 —
— Loose, per dz.	0 8- 1 3	— Beurré Diel	2 0- 4 0
Cherries (French), ½ sieve	4 6- 6 6	— Easter Beurré	6 0 —
— boxes	0 9- 1 6	Pineapples, each	2 6- 5 0
Cranberries, case	13 0-14 0	Plums (Cape), per box	10 0 —
Dates, Tunis, per box	4 0 —	Strawberries, p. lb.	3 0- 3 6
Figs, per dozen	2 0- 8 0	— Second quality	1 0- 1 6
Grapes (English), Black Hambro, per lb.	1 6- 3 0	— French, crates (4 baskets)	5 0-16 0
		— French, crates (10 baskets)	10 0-12 6

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, Green French, p. doz.	1 0- 3 6	Marrows, per doz.	4 0 8 0
Asparagus, per bundle.—		Mint, per dozen	3 0- 4 0
— Toulouse	1 3- 1 8	Mushrooms (house) per lb.	0 6- 1 0
— Montauban	2 0- 2 6	— Buttons, per lb.	0 6- 1 0
— Dijon	0 6- 0 8	Mustard and Cress, per dozen pun.	1 0- 1 6
— Giants	5 0-20 0	Onions (English), bag	4 6 —
— English, per bundle	1 6- 6 0	— Valencia, case.	11 6 —
Beans, French, p.lb.	0 4 —	— pickling, per bushel	3 6- 4 0
— Broad, per pkt.	0 6 —	— French, ½ bag.	2 3 —
— Broad, per pad (loose)	6 0 —	— Spring, dozen bunches	1 0- 2 0
— Flageolet, box	1 0 —	Parsley, 12 bunches	1 0- 1 6
— Home grown, per lb	0 6- 0 8	Peas (French flats)	3 0- 6 0
— Channel Island	0 6- 0 8	— English, per lb.	0 6- 1 0
Beetroot, bushel	0 9- 1 3	— Channel Isl'nds	0 6- 1 0
Broccoli, sprouting, per bushel	1 6- 1 9	Potatos (new):—	
— per doz.	1 0- 2 0	Canary, cwt.	12 0-16 0
Cabbages, Spring, per dozen	0 6- 1 0	— Channel Island Kidneys	0 2½- 0 3
— red, per bushel	2 0 —	— Jersey, cwt.	15 0-16 0
Carrots, French pad	3 0 —	— St. Malo, cwt.	14 0-15 0
— per bag, unwashed	1 3- 1 6	Rhubarb, per doz. bundles	2 6 —
— bag, washed	2 0- 2 6	Spring greens, per bushel	1 0- 1 3
— new, per dozen bunches	6 0 —	Salsafy, per dozen bundles	4 0 —
Cauliflowers, per tally	3 0-10 0	Tomatos:—	
Chow Chow, per dozen	1 6- 2 0	— English, per lb.	6 0 —
Cucumbers, dozen	2 6- 3 0	— small selected	4 0- 5 0
Endive, per dozen	1 9- 2 0	— Seconds, per 12 lbs.	3 0 —
Horseradish, foreign, per dozen bundles	12 0-18 0	Turnips, per doz. bunches	1 0- 1 6
Leeks, 12 bundles	1 6- 3 0	— bags	1 0 —
Lettuces, Cos, per dozen	2 0 —	— new, per dozen bunches	6 0 —
— French, per dz.	0 11- 1 0	Turnip Tops, bush.	1 0- 1 6
		Watercress, per doz. bunches	0 4 —

Remarks.—Strawberries are a better trade owing to an increased demand. French Strawberries are plentiful, the fruits arrive in a very soft condition. English Tomatos are cheaper, but the foreign supplies have now finished. Cucumbers are selling better. Both English and foreign Asparagus are cheaper. Trade generally is good. *E. H. Rides, Covent Garden, Wednesday, June 6, 1906.*

Potatos.

Lincolns, 60s. to 70s.; Dunbars, 85s. to 95s.; Germans, 70s. to 75s.; Teneriffe, 15s.; Jerseys, 13s. to 14s.; Cherbourgs, 11s. to 12s.; Lisbons, 5s. per case.—*John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

The Whitsuntide holidays have somewhat interfered with trade, although business improved this morning. Rambler Roses are over-plentiful. I find some are sold to the street-hawkers at low prices. Some very good Roses of the variety Mrs. J. Laing, in pots, are now seen. Lilium longiflorum in pots are marketed by several growers. I noticed fine plants offered at 24s. per dozen. Hydrangeas of all sizes are good. H. Hortensia, with about twelve large heads of bloom on each plant, were realising 25s. a pair. There is little demand for large Hydrangeas except on special occasions. Well-grown plants of Marguerites in all sizes are plentiful. The best trade is done in those realising from 6s. to 8s. per dozen. Saxifraga pyramidalis will soon be finished for the season. Herbaceous Calceolarias are over, but there are fine plants of the ordinary yellow variety suitable for decorative purposes, and others of the bedding type. Mignonette varies considerably in quality; best quality plants sell fairly well. Pelargoniums of all sections are good. I noticed this morning well-flowered plants of the ivy-leaved Baden-Powell, and another named Leopard, but they are not so popular as the older sorts. In Zonals are seen remarkably well-flowered plants of the leading sorts in 48 pots. Plants in 60 pots are not so well flowered as earlier in the season. The tricolor-leaved varieties from Mr. Messer are very good. Show varieties vary; the best find but a moderate demand. Among Fuchsias I find nothing new. Lady Heytesbury, Ballet Girl, and Royal Purple are among the best seen. Double Petunias are only medium in quality, but the singles (in 60's) are remarkably fine. Supplies of Azalea indica appear to be quite finished for the season, but this morning I noted some good plants of A. mollis. There is little variation in the supplies of Palms, Ferns, etc., and prices do not change.

Cut Flowers.

At closing time this morning there were large quantities of beautiful Roses remaining unsold. I found that good blooms of Liberty on long stems were offered as low as 2s. per bunch of 12 blooms. Carnations sell rather better, although these are also over-supplied. Sweet Peas are quite a feature just now; the quality varies; some are very fine. Mr. J. Lowe, of Uxbridge, takes the lead with Gladiolus Colvillei in several varieties of first-class quality. Centaurea cyanus, in several shades of colour, from Mr. Weirmig, are very good. He has also some nice Oriental Poppies. Shirley Poppies are also coming in. Spanish Irises are still very good. Herbaceous Pæonies and Pyrethrums are arriving in large quantities. The single varieties of the latter in soft pink, crimson, and other bright shades are very nice. Liliums are more plentiful again, and prices are lower. Lily of the Valley is not over-plentiful. Stephanotis, Gardenias, and Tuberoses are all plentiful. Among growers who have taken stands in the new portion of the market are Messrs. J. F. Groves and Sons, C. Banks, W. J. Heath, J. Fraser, Mizen Bros., S. J. Denson, J. Solomon, and J. Glover. The last-named salesman is the oldest regular attendant in the market, he being the only survivor of seven who first started in the street before the market was built; this was about fifty years ago.—*A. H., Covent Garden Market, June 6th, 1906.*

Obituary.

John Bath.—We much regret to record the death of this well-known horticultural salesman, of 32 & 34, Wellington Street, Covent Garden. Mr. Bath was born in Kent, and early in his career assisted his brother, Mr. J. Bath—a well-known salesman in the Borough Market. He left his brother to start into business in partnership with Mr. W. B. Cooper. The partnership was dissolved after some time, when Mr. Bath took over the entire business to himself, and so successful did he become, that he was obliged to take other premises adjoining his own in order to cope with the increase. Deceased was 62 years of age. The funeral will take place on Friday, 8th inst., after these pages have gone to press.

Blackie.—On the 5th inst., at 1, Belhaven Terrace, Glasgow, Walter Graham Blackie, Ph.D., LL.D., Publisher, in his 91st year. Friends will please accept this intimation.

ANSWERS TO CORRESPONDENTS.

Buttercup-Daisy: *A. H.* Your specimen belongs to the species decipiens. If you try you can easily evolve it in a few seconds. How many aeons would be required to produce it naturally is far beyond our powers of computation.

Carnation Souvenir de la Malmaison: *T. R. P.* From a botanist's point of view there is no recognised specific difference between Souvenir de la Malmaison Carnations and the type known as tree Carnations, both sections having undoubtedly originated from one species Dianthus Caryophyllus. But from the garden standpoint there are wide differences, the most obvious being the stronger, broader curled leaves of the "Malmaisons" and the larger size and more powerful fragrance of the flowers. The green calyx also is shorter, and the individual sepals are wider and more obtuse. Their natural season of flowering in English greenhouses is in spring or early summer, rather than in winter, when the tree varieties are often at their best. "Malmaison" Carnations are propagated by layers, and their cultivation is less simple than that of tree Carnations. Owing to the leaves being of thicker substance and often softer in texture, they are more liable to attacks of the fungus diseases. Careful cultivators make every effort to obtain clean stock to start with, and then by keeping the plants in as cool and well-ventilated an atmosphere as is practicable the leaves become comparatively hard, and being usually free from condensed moisture the fungus spores are the less likely to gain a footing. We believe that some of the new varieties show that crosses have been made between plants of these varieties and other types of Carnations.—*R. McK.* We fear that the trouble is due to the fungus Helminthosporium, but it is only in its early stage. Pick the leaves off and burn them. Send us some of the most disfigured leaves for further examination.

Crickets and Woodlice: *Bathford.* You can kill them with a little arsenic and honey placed near their haunts, but be careful to keep children and domestic pets out of the way when the arsenic is laid about. Many can be trapped by means of garden mats, rolled and placed on the hot water pipes. In the morning the pest will be found hidden in the folds.

Cymbidium: *B. L., Burton.* There appears to be nothing wrong with your treatment of Cypripedium spectabile. Remove the soil carefully from one or two of the plants and find out the condition they are in.

Figs: *G. H.* The "fruits" may have fallen from the tree owing to defective fertilisation of the flowers, or possibly from disease. Send us specimens for examination.

Grapes: *C. A.* Your berries are affected with the "spot" disease—Glæosporium ampelophagum. Cut out and burn all the diseased berries and spray the bunches afterwards with liver of sulphur, ½ ounce to one gallon of water.

Montbretias and their allies: *Montbretia*. You ask for a list of plants allied to the Montbretia. These plants belong to the tribe Ixieæ, of the National Order Iridaceæ. The flowers of this section are always spicate—that is, the inflorescence forms a spike, and there is never more than one flower to a spathe. Many important garden genera are to be found in the tribe—the Ixias, Freesias, Watsonias, Babianas, Gladioli, Antholyza, &c. The nearest genus of all is Tritonia, of which Montbretia is really a sub-genus. Other more nearly allied genera to Montbretia are Crocosma, Tritonia, and Sparaxis. In Crocosma the perianth-tube is sub-cylindrical, with capsule inflated and deeply three-lobed. The spathe valves are short and oblong. In Tritonia, the perianth has a short cylindrical tube. The outer spathe valve is emarginate, and, like the others, small and oblong. The Montbretias have a spreading oblong callus on the claw of the three lower segments, which is not found in Tritonias. In Sparaxis they are scariose and deeply lacerated. The perianth-tube, which is short, is funnel-shaped in the upper half. All the genera in this section have the perianth limb sub-regular.

Names of Plants: *J. K. B.* 1, Ornithogalum nutans; 2, Saxifraga geum; 3, Trollius europæus var.; 4, Caltha palustris double; 5, Trollius europæus; 6, Helleborus viridis.—*W. B. H.* Prunus Padus, native of Britain.—*P. M. G.* Claytonia perfoliata.—*F. B.* Clematis (Atragene) alpina.—*G. C.* We cannot undertake to name Azaleas.—*Grasses.* 1, not recognised; 2, Trifolium minus; 3, Bromus mollis; 4, Aira cæspitosa; 5, Alopecurus pratensis; 6, not recognised; 7, Bromus sterilis.—*T. V.* 1, Gesneria elongata; 2 and 3, Anthurium Scherzerianum; 4, Anthurium Andreanum; 5, a seedling from Andreanum; 6, Oncidium divaricatum; 7, Nepeta Glechoma variegata.—*T. H., Ireland.* 1, Ophiopogon spicatum variegatum; 2, Eurya latifolia variegata; 3, Ophiopogon Jaburan variegatum; 4, Veronica spicata variegata; 5, Lithospermum prostratum; 6, Polygala Dalmaiseana.—*A. Y. L.* Vanda limbata.—*H. H.* 1, Odontoglossum Coradinei; 2, 3 and 4, Varieties of Masdevallia Harryana; 5, Sophronitis grandiflora; 6, Dendrobium chrysanthum.—*C. B.* Vanda tricolor.—*A. S.* Tamarix species, probably T. gallica.

Orange Rust on Roses: *H. W. C.* and *W. M. B.* The Orange rust is one stage in the life history of Phragmidium subcorticatum, a fungus figured and described by Mr. W. G. Smith in our issue for July 17, 1886. The appearance of the disease in spring depends on the presence of resting spores from the previous autumn. It is, therefore, necessary to collect and burn all fallen leaves in the autumn. Spraying with dilute Bordeaux mixture or ammoniated carbonate of copper solution or with a solution of sulphate of copper—2 ounces in 3 gallons of water—in early spring before the buds expand, and at intervals during summer will check the disease.

Peach Leaves Injured: *Gardenia.* We suspect the cause of injury to arise from the contaminated water, for the appearance of the foliage points to injury from some physical, rather than from fungoid attack. If the poison has not affected the roots, the trees will recover later, although they must necessarily receive a severe check from the defoliation. Syringe the plants with clear water, and encourage growth afresh.

Potatos: *W. D. S.* The trouble complained of is one well known and often discussed in horticultural periodicals. There is no specific disease present, but for some yet unexplained reason certain strains of Potato, grown under certain conditions, prove almost entirely or quite sterile. The substances present in the tuber that should dissolve and form the first food for the young shoots fail to do so, consequently there is no growth. The explanation usually given is that the outcome of such sterility is due to long continued reproduction by means of tubers only, which acts on some particular strains much more than on others. The condition is much more prevalent in France than in this country.

Primula obconica: *J. M.* The irritation will in all probability gradually subside of itself, aided by the application of cold water. If it does not, consult a medical practitioner.

Rain Water: *A. T.* In order to soften the hard water let it be put out into tubs and tanks and exposed to the air as long as possible before it is applied to the plants.

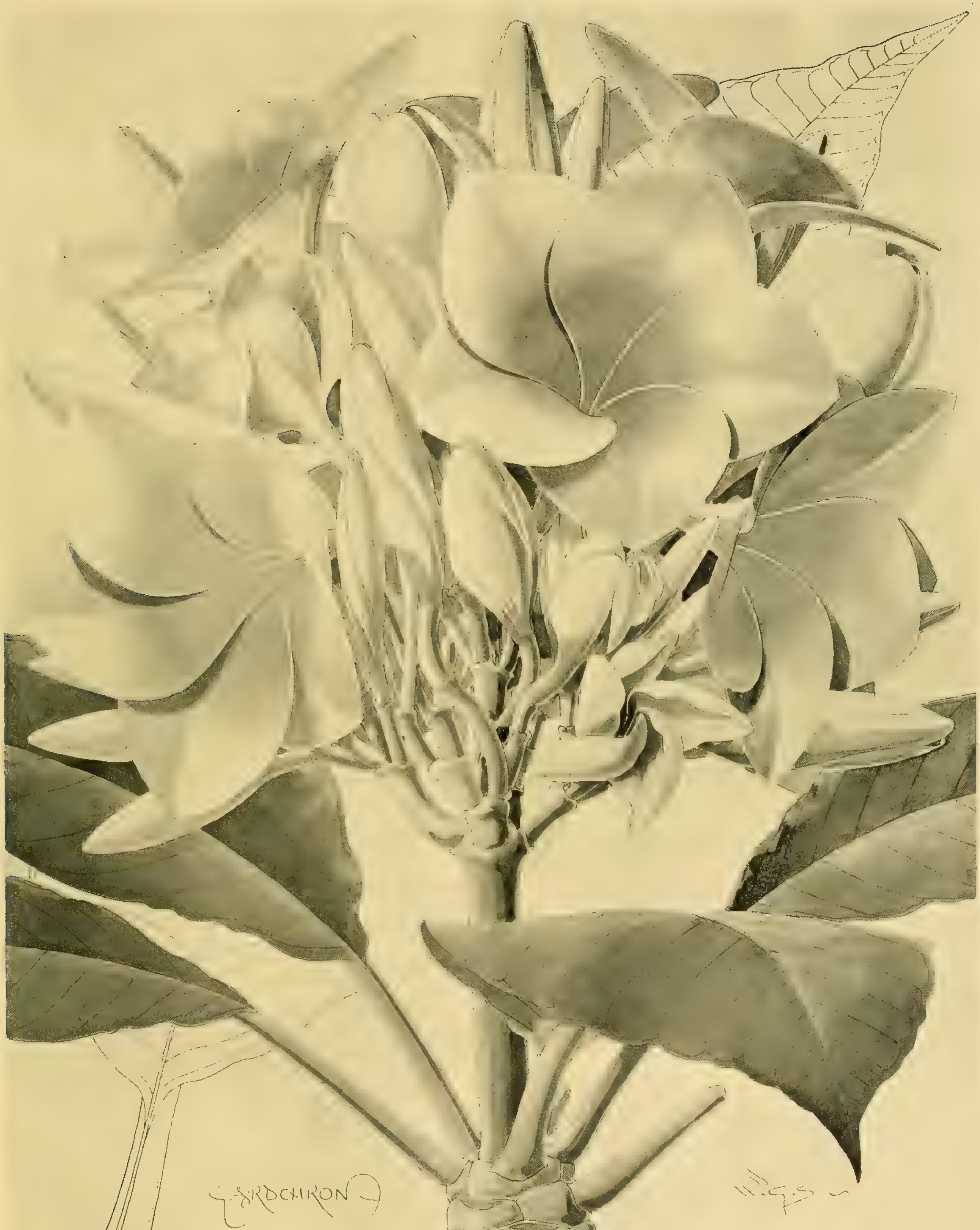
Rhododendrons in Window Boxes: *A. T.* These are not the most suitable plants for such cultivation, and the trouble is probably due to their exposure in a too sunny position, and to the roots suffering occasionally from want of water. Have the boxes made of a good depth, cultivate the plants in peat soil, and above all give careful attention to providing the roots with water. A window sill in half shade would be the best position during summer time.

Rose: *F. B.* The calyx tube is not so much developed as usual so that the carpels are exposed. It is of very common occurrence, and is due to some check to growth, but how that check was caused we cannot say.

Tomatos: *W. H. G.* We cannot say what the disease is unless you send us specimens for examination. Tomato plants should not be syringed frequently, if at all; moisture makes the foliage more susceptible to the attacks of fungi. The Asters are doubtless attacked by the mildew fungus mentioned in the reply to *Junction* on p. 355, which see.

Vine Leaves: *F. A.* The leaves are perfectly free from any disease that can be attributed to either fungi or insects. The brown discoloration which constantly follows the larger veins of the leaf undoubtedly originates in some disturbance of the balance between root and leaf action, and the disturbing cause in all probability will be found to proceed from the roots, which should be examined next autumn season.

Communications Received.—W. J. B.—E. A. D. S.—W. B.—J. H.—B. D. J.—B., Hayata, Tokyo—A. H.—L. E. W.—Dr. Fedde, Berlin—C. O., Antwerp—V. A. C., Ithaca, New York—L. B., New York—H. F. Mc M.—R. Veitch & Son—J. W.—T. H.—W. H.—W. A. C.—Shaftesbury—J. D.—J. W.—E. B. W.—C. P.—Sanders—C. E. M.—A. C. B.—X. L.—W. E. C.—E. H. J.—A. W.—J. G.—S. A.—F. M.


G. ARD. CHRON.
W. G. S.

Sketched by Mr. Smith from specimens exhibited by Lady Plowden.

PLUMIERIA LUTEA, A PERUVIAN SHRUB, INTRODUCED TO THIS COUNTRY IN 1869. FLOWERS WHITE WITH GOLDEN YELLOW THROAT, THE LOBES BEING SLIGHTLY FLUSHED WITH PINK.

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THE
Gardeners' Chronicle
No. 1,016.—SATURDAY, June 16, 1906.

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SUMMER PRUNING.

THE general ignorance in the matter of fruit culture in Great Britain is still surprisingly great, although in various districts a gradual improvement has been noticeable during recent years. Market-gardeners and others who pay particular attention to the subject of orchard cultivation with a view to making a profit therefrom usually put themselves in possession of a knowledge of up-to-date methods, and are, as a rule, careful to select suitable situations for their orchards, afterwards paying full attention to their crops in every detail. By such methods, and only by the most careful and constant supervision, can anyone hope to make fruit-growing a profitable occupation, and even then there is a great deal that must be left to chance, for in this uncertain climate one never knows what a season—or even a day—may bring forth in the matter of weather.

But even if we assume that the professional fruit-grower always knows his business—an assumption that is not quite justified in every instance—we have ample proof on every hand that there are thousands of amateurs (among whom we may include many who dispose of their surplus supplies, when they have any, in the market) who have very little idea indeed of the manner in which an orchard should be cared for if it is to realise a satisfactory return. It matters little whether one has few trees or many, or whether it be desired to grow for home consumption or for sale, for the principles involved in either case are the same. It is true that anyone with plenty of time on his hands and only a few trees to look after can afford to give greater attention to the orchard than his neighbour who is doing things on a larger scale; and, of course, under such circumstances the man with the smaller orchard may be expected to get a better result per tree than the other, but no one should attempt to cultivate a larger orchard than he can manage to maintain in its highest state. It will be found, too, in this matter, as in others, that the greater the number of trees, the more difficult will it be to maintain a high average of individual excellence.

THE ADVANTAGES OF SUMMER PRUNING.

No branch of fruit cultivation is so neglected perhaps as the matter of pruning, and the present is a suitable occasion for the discussion of the subject. The old idea of pruning such fruit trees as Apples, Pears, Plums, Cherries, Currant (black and red), and Gooseberries, was that the work should be left until the winter, and this method is still practised in nine gardens out of ten. The chief arguments brought forward in support of the old-fashioned method are, firstly, that trees would be injured if pruned at any time except when they are in a dormant state; secondly, that you can "get at them" and see what you are doing so much better when the leaf is off; and, thirdly, that pruning is a sort of job which comes in handy as an occupation for idle hands during a dull period in the off season. As for the first of these ideas, I may say at once that, if judiciously done, pruning in the summer is far less likely to hurt the trees than if it be done in the winter, especially if the weather in the latter case should be cold or frosty. In the second place, when the leaf is off the tree, you are by no means so well able to judge what pruning is necessary, because it is the leaves that do the crowding on the branches, and the object, or one of the objects, of pruning is to avoid this crowding, which prevents the free passage of light and air—two essential things if fruit is to be expected.

And as for pruning being a handy job to fill up time, one can only say that since it is one of the most important jobs of the year, it should be attended to at its proper season, and not looked upon as a sort of odd time occupation.

I do not, of course, intend to suggest that winter pruning is altogether an unnecessary operation, for there are many instances in which a certain amount of work in this direction may be desirable during the time that the tree is resting. This is the case particularly with old trees carrying a lot of dead or cankered wood, whose presence is not only a hindrance to the well-being of the healthy parts of the tree, but also a useless encumbrance, and a happy hunting ground for all sorts of injurious insects. Work of this sort may be advantageously done in the winter, because it involves a good deal of time and heavy labour—a thing for which one can seldom arrange conveniently in the more busy summer season. In addition to this, the cutting away of dead or useless branches must cause a certain amount of injury to the maturing crop if such work be done while the trees are carrying their crops, and for this reason also the removal of larger branches is best attended to at a time when there is little chance of damage being done. Even in the winter there will be next year's buds to take care of, but if the thinning of heavy branches is attended to early in the winter, as soon as the sap has ceased to flow, the chance of injury to buds will not be very great, and the trees will not suffer in any way from subsequent frost if any wounds on the live wood are dressed over with paint or other suitable preparation. Apart from this removal of dead or dying wood, and damaged or deformed branches, all other pruning may safely be carried out in the summer season.

The advantages of summer pruning are indeed manifold. The process involves less labour, because the wood to be removed is soft and easily nipped off with a knife, or sometimes even with the finger and thumb. There is, therefore, a gain in time, for a man may prune half a dozen trees in June in the time that one would be occupied in operating on one in the following winter after the twigs had grown to their full extent and toughness. To the tree itself there is also a gain in time and energy, for the rest of the growing season, after pruning in June, will be occupied in plumping up fruit-buds for the coming spring, instead of wasting power in making more wood and a quantity of useless wood buds which will never be allowed to come to anything. The tree will, very probably, try to make a little more wood during the two remaining months of summer, July and August, but the shoots thus formed will only be quite small, and may easily be rubbed off with the fingers at the end of the latter month, or so soon as they appear, if the extra time can be spared. By following the custom of summer pruning here laid down, there is a gain of practically a whole season in the development of the trees, a state of things which is of the utmost importance to anyone desiring a quick return for capital invested in the orchard. Again, it will be possible under this method to admit light and air among the branches at the very time of year when those two indispensable requirements of a fruit tree are to be obtained at their best, thereby allowing the trees to derive the full benefit of the summer sun for ripening the fruit and hardening off the new growth of wood upon which the buds are forming for another season. This admission of light and air is in reality the greatest advantage of summer pruning, because it encourages the natural action of the tree in all ways without unduly hurrying it, while, at the same time, a great part of the tree's work is taken away from it by the removal of useless growths.

It is easy enough to lay down hard and fast rules for the summer pruning of Apples, Pears, Plums, and Cherries, but there are a few exceptions here and there, which the inexperienced should look out for. The reason for this caution is to be found in the fact that a few varieties (e.g., the "Peach Apple," as it is commonly known, although there is more than one variety of Peach Apple), have a habit of producing their fruit in an unorthodox fashion. The Apples referred to fruit more readily at the tips of their branches on the young wood than on the older growths, as is common with most other varieties, and there are a few other kinds of fruit trees of various sorts that have similar peculiarities. It is sometimes for lack of knowledge in this direction that amateurs, following the most approved methods of pruning, are disappointed at the failure of their crops. An acute observer will, however, soon learn how to treat the exceptions to the general rule, and if he be in doubt as to the right mode of procedure, his best plan is to consult a neighbour whose experience in such matters is to be relied upon. Asking advice is very dangerous at times, and if it is sought too often, so many different ways of doing a thing will be stated that the novice will be more perplexed at the end than at the beginning. But the counsel of one whose fruitful orchard is a living testimony to the power of his knowledge and his skill should be sought.

The method of pruning Apples, Pears, Plums and Cherries is practically the same in each case, always remembering that the two latter usually require more lenient treatment than the two former. It is easy enough to distinguish the fruit-buds from the ordinary wood-buds, and one must exercise one's common sense as to how to leave plenty of the former with a sufficient number of the latter to carry on the growth of a shapely tree. The general rule of summer pruning is to nip back the young shoots to within five or six "eyes" of their origin, and then, later on, if new growth has been made, to nip the last shoot back to within one eye of the older piece. This holds good for Apples and Pears, but with Plums and Cherries, after the tree is to some extent pruned, the chief anxiety of the fruit-grower should be the training in of good sturdy shoots well covered with fruit-spurs, and the cutting out of all useless or crowded shoots mainly covered with wood-buds only. Weakly growths, which generally appear on trees that have been allowed to get overcrowded, should be thinned severely, and the same thing applies to long, strong shoots that show a tendency to produce wood-buds without development of fruit-spurs. In this latter case, root-pruning is usually a necessity, but of that we must treat on another occasion. Nor is the process of shortening the roots desirable at the same time as the pruning of the branches. If the tree above ground is attended to first, any root-pruning necessary may be seen to later on in its proper season, before the new year's growth begins.

Bush-fruit.

A word as to the treatment of bush-fruit will supply a fitting end to this article. In Red Currants, as everyone knows, the desire of the cultivator is to retain the old wood with an occasional strong shoot at the tips of the branches to extend the growth of the bush. Young growths at the side should be pinched hard back, and new shoots at the tips shortened to six or eight "eyes." Every other year, a couple of young shoots from the base, if there be such, may be allowed to come up to take the place of the worn out wood in the course of time. With Black Currants, which bear on the young wood for the most part, the treatment is exactly the opposite. Old wood should be cut out so soon as it fails to produce long, healthy young shoots, and young wood should be encouraged without overcrowding. A slight shortening of the young shoots may be necessary if they are inclined to grow too long, but, as a rule, this will not be necessary. Gooseberry bushes bear the best fruit also on the younger wood, and require little pruning, except the "tipping" of the shoots, the removal of those that become too crowded, and the cutting out of dead wood or that which is past bearing. It should be remembered that with all bush fruits the object of the pruner should be to maintain his bushes as nearly as possible in the form of an inverted cup, letting in light and air in the centre, and encouraging the formation of fruit as much as possible on the outer edges of the circle. This is a golden rule with all kinds of fruit trees grown in the open, and should be borne in mind during the process of pruning. *East Sussex.*

KEW NOTES.

Senecio Heritieri.

It is considerably over 100 years since S. Heritieri was introduced into this country. A small spray figured in the second volume of the *Botanical Magazine*, tab. 53, under the name of Cineraria lanata, gives a rather poor idea of the plant. However, at that time its value was recognised, for in the description of the plant we read that it "by far eclipses all the others (Cinerarias) cultivated in our gardens." Africa is given as the home of the plant, but this has since been proved incorrect. A native of the Canaries, it is probable that the Kew collector, Philip Masson, was the first to introduce the plant.

It is a loose, much-branched plant, and, as flowering in No. 4 greenhouse, is about 3 feet in height. Grown from cuttings rooted in the autumn, the plants were kept in a cool frame during the winter and later in a cool house. The branches, petioles, and underside of the leaves are covered with white tomentum, the upper surface of the leaves being greyish green. The flower-heads are slightly fragrant, about 1½ inches across; ray florets, white-tipped with lilac; disc florets purple, from which, when mature, the yellow anthers stand out prominently. The species lasts in flower for quite two months.

Late Flowering Tulips.

The flower beds in front of the Palm House, between 40 and 50 in number, were this year devoted to late flowering Tulips. In a few of the larger beds Wallflowers, Polyanthus, and Pansies were associated with the Tulips. Only one variety was grown in a bed, in a few instances there were two or four beds of one variety.

The Darwin Tulips, during the last few years, have become very popular, but several colours lacking in them are to be found amongst the May-flowering cottage Tulips, and to obtain the best effect they should be used in conjunction.

It is easy to distinguish the Darwins by their more robust habit and stiffer flower stalks. Pride of Haarlem is a rich, dark-rose coloured flower, easily first here in point of size; Margaret, a pleasing soft pink shaded with silvery white. Deeper in colour are the rich pink flowers of Clara Butt, probably the most popular of all the Darwins. La Tulipe Noire, the black Tulip, naturally attracts immediate attention. A small round bed containing about 100 bulbs has been very prominent. Two large beds of Frau Angelica, although not so rich in colour, were effective in contrast with the varieties in close proximity. Harry Veitch is one of the richest reds, a very telling colour associated with yellow Wallflowers, as also are William Pitt, crimson, The Shah, and Europe, salmon-scarlet. Rose Queen has lovely lilac-rose flowers, other shades of lilac are Early Dawn, Guden, and the heliotrope lilac Rev. H. Ewbank. La Candeur is the nearest to a pure white grown here in this section, when first opening it is shaded with lilac passing to white.

The May-flowering cottage varieties are used chiefly to furnish yellow and white. The reader may imagine the picture of over 2,000 flowers of Parisian Yellow gracefully swaying over a groundwork of dark Wallflowers. Parisian White, Picotee, white-edged with rose, and La Merveille, a rich salmon-orange delightfully fragrant, all helped to add to the effect as a whole.

The gorgeous Parrot Tulips were represented by half-a-dozen beds. The flower stalks twist and tumble about in such a way that they do not lend themselves, like the varieties with stiff stalks, for effective arrangement, especially in the distance.

Altogether between 14,000 and 15,000 bulbs were planted last autumn. *A. O.*

ORCHID NOTES AND GLEANINGS.

ANGRÆCUM KOTSCHYI. (See fig. 153.)

A specimen of this rare, singular, and beautiful species is now in flower in the Right Hon. Lord Rothschild's gardens, Tring Park (gr. Mr. Arthur Dye). The species was first discovered by Theodor Kotschy in 1838, and is recorded as having been found in several districts in East Africa at later dates, but it was not introduced into gardens until Sir John Kirk sent it from Zanzibar. The plant flowered for the first time in the nurseries of Messrs. Jas. Veitch & Sons, at Chelsea, in 1880. It is a very striking species with short stems, very thick roots, ovate, unequally bilobed, dark green leaves, and pendulous racemes of white flowers, each over an inch and a half across, and borne on pale salmon-red pedicels. The flowers are furnished with spurs 9 inches in length, thicker on the apical half which is more or less spirally twisted. The Hon. Walter Rothschild observes that the spur coils up on the apical half at night, thus shortening its length. In the daytime it straightens out and consequently elongates. The specimen at Tring Park came from Uganda, and the Angræcums received from that district at Tring Park include the large and singular A. infundibulare, previously only known on Princes Island on the extreme west, A. Kotschyi, which extends to the extreme east; A. Rothschildianum whose only affinity is A. Galeandræ, a West African species not in cultivation, and two or three other singular looking species which have not yet bloomed. The Tring Park A. Kotschyi has flowers larger than the original type, the lip especially being broader. It requires a warm temperature similar to Phalænopsis.

CIRRHOPETALUMS.

Several pretty species sent by different correspondents last week prove that there is still interest in these singular and pretty Orchids. From Sir Chas. W. Strickland, Bart., Hildenley, Malton, Yorks, comes a rather showy species which, however, travelled badly, for the blooms were withered on arrival. It is probably Cirrhopetalum pulchrum, the dome-like upper sepa-striped inside with purple, and bearing an erect purple filament at the apex being exactly like that species. The habitat of C. pulchrum is said to be Malaya; the species sent by Sir Chas. Strickland is supposed to come from Uganda. If so it is of additional interest, for probably the only species recorded near that region is C. Thouarsii, of Madagascar.

C. Collettii is sent by G. W. Jessop, Esq., Cliffe Cottage, Rawdon, Leeds. It is one of the most beautiful and elegant species. The pretty umbel bears flowers 3½ inches in length, the closely approaching lower sepals being continued into slender tails, and the upper sepal and petals decorated with a purple fringe, the body of the flower yellow and purple.

Cirrhopetalum cornutum is from the Hon. Walter Rothschild, whose specimens bore many umbels of yellow and copper-tinted flowers. Also from Messrs. Hugh Low & Co.

Cirrhopetalum picturatum is from Messrs. Sander & Sons, St. Albans. It is a showy species with umbels of greenish flowers mottled with purple, and each nearly 2 inches in length. The upper sepal is concave and furnished with a purple filament bearing a thickened tip. The lip is of deep purple.

Cirrhopetalums are best cultivated in baskets, or Orchid pans for suspending near the glass. They are mostly evergreen plants which do not require to be perfectly dried off during the resting season, though when not making growth or roots only a very limited supply of water is needed at the roots, and the plants require a less warm atmosphere.

GREAT ORCHID SHOW AT MANNHEIM.

The programme of the Great International Spring Show of Orchids to be held at Mannheim, Germany, on May 7, 8, 9, 1907, is already to hand, and particulars relating to the proposed show can be had from Mr. Otto Beyrodt, Marienfelde, Berlin, a gentleman who took the lead in organising the very successful Orchid show at Dusseldorf two years ago. The schedule contains 53 classes for Orchids. No important section seems to have been omitted, and prizes are offered on the most liberal scale. Class 1, for example (collection of 100 and more Orchids in flower in different varieties, nurserymen): 1st prize, 1,000 marks; 2nd, 500 marks; 3rd, 300 marks. Class 2 (amateurs): 1st, 800 marks; 2nd, 400 marks; 3rd, 300 marks. British Orchidists were delighted with their reception at Dusseldorf, and it augurs well for the show at Mannheim, where we hope our countrymen will be well represented. Mr. Beyrodt states that Orchids are making great headway in Germany, and that the newly established Orchid Society has a large number of members whose numbers are steadily increasing.

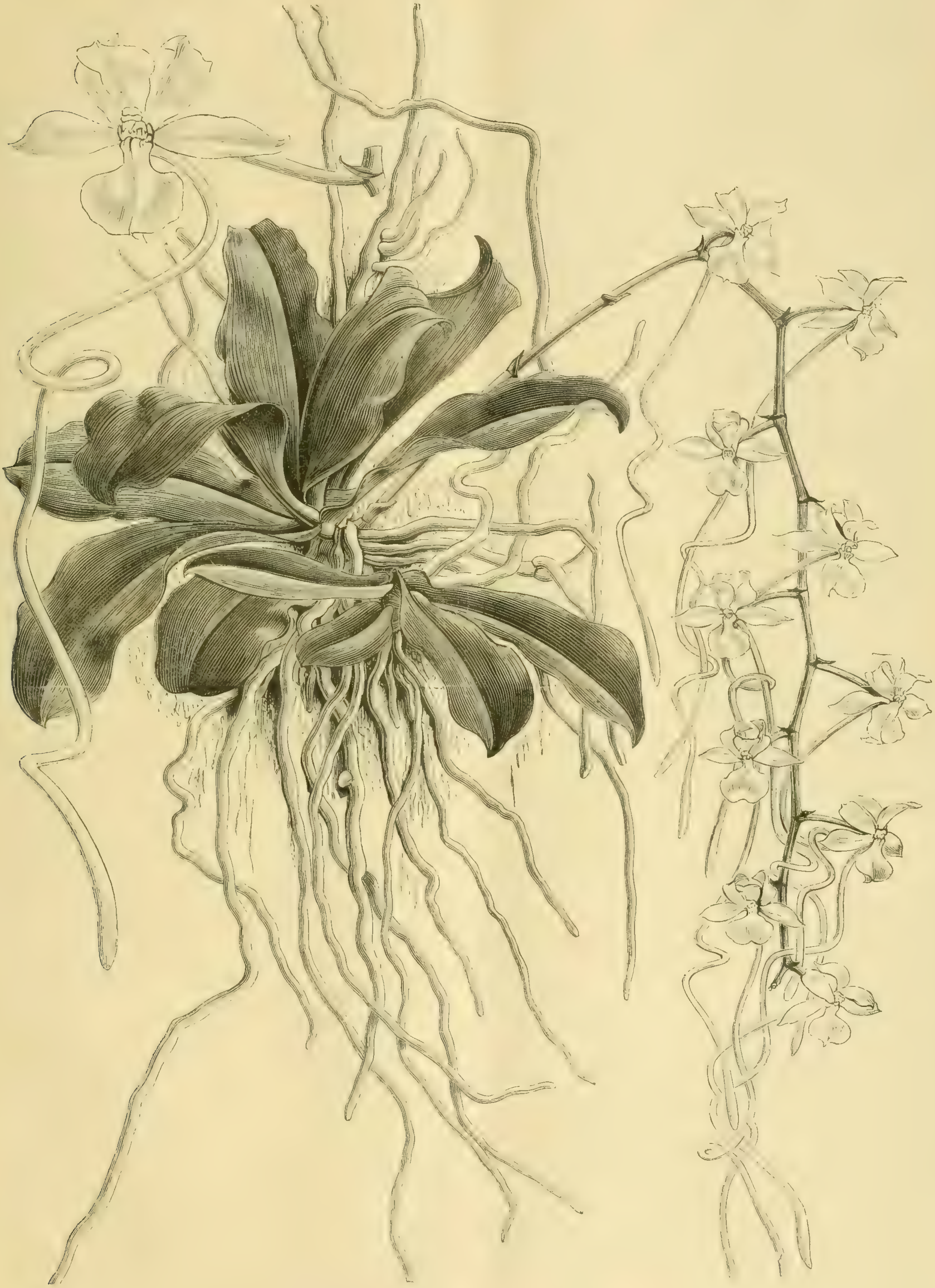

FIG. 153.—ANGRÆCUM KOTSCHYI. FLOWERS, WHITE. (For text see page 378.)

NEW OR NOTEWORTHY PLANTS.

I HAVE received from M. Geo. Bronckart, of Charleroy (Belgium), two new species of Dendrobium found in Indo-China.

Dendrobium Bronckarti[*] was discovered in the hills. It flowered in May, and has been named after the collector. In habit it seems near D. Farmeri of Paxton, but the stems are slender, not so club-shaped; the lip is tinged with rose, the disc being orange-yellow. The flower-bracts are very long. This beautiful species is very promising.

The second species, found in the same country, from which we have seen flowers preserved in alcohol, and living plants, is beautiful and free-flowering. It has stems attaining 75 centimetres in length, and much flattened when dried. The leaves are in two ranks, alternate, emarginate at the apex, deep green, and 8 to 10 centimetres in length. The flowers are very numerous, one stem bearing seven to eight racemes, each with from three to four flowers. The sepals, not so large as the petals, are ivory-yellow and spreading, the petals are undulated and twisted, and of the same colour as the sepals; the lip is as long as the petals and sepals, tapering into a short claw, cucullate, downy on both sides. The base is yellowish, the central part violet, and the apex ivory-yellow. The column is very short. M. G. Bronckart found the plant at an altitude of 500 metres, and has several plants in cultivation at Charleroy. This D. Dartoisianum[†] seems to be allied to the group of D. heterocarpum Wallich, D. Pierardi Roxburgh, and with forms of the group of D. nobile, but the sepals of D. Dartoisianum are not so large as those of D. nobile and allied species. *E. D. Wildeman.*

HOUSE-GROWN AND OUTDOOR APPLES.

WE are often treated at exhibitions to a sight of singularly fine, richly-coloured examples of house-grown Apples. It is always evident that such specimens excel in colour and finish, if not in size, outdoor fruits of similar varieties. What has been asked, and, so far as I know, not answered, is how much do these beautiful house-grown fruits differ in flavour and table quality from good open-air grown fruits? It by no means follows that external beauty and quality are synonymous. Too often it is the other way, and of both Apple and Pears the best flavoured fruits have come from fairly old trees, often Standards in orchards, rather than from dwarf trees that have been highly fed, although the fruits so produced have been both large and high-coloured. Grand as a dish of some fine, high-coloured Apple or Pear may look on the dessert table, yet how rarely is real quality found allied. The fruits may be juicy, or they may be dry, but how seldom rich in flavour? Besides testing indoor against outdoor fruits of similar kinds of varieties, we have need to test quality in outdoor fruits grown under diverse conditions. Apples grown on walls often come near to glass-grown fruit in appearance and size. Sun heat, with ample moisture, are great factors in producing size and colour. But the size is generally of an artificial nature, the fruits lacking solidity and keeping qualities. Sometimes such a commonly highly-flavoured Apple as Cox's Orange Pippin produces, under special or high culture, very large fruits, but greatly lacking in flavour and in juiciness as compared with fruits of smaller size and much less highly coloured, grown on a standard or bush or Espalier tree of considerable size. That fine product of this superb dessert Apple, Charles Ross, largely grown on young trees which have been highly fed for the purpose of securing large samples, almost like Peasgood's Nonsuch, has proved most disappointing, because so soft and flavourless. When presented in moderate size lately at the R.H.S. Fruit Show from a less highly-fed tree, the fruits were of very high excellence, and easily took the first prize in their class. The same characteristic will be found in relation to practically every table variety that is commonly grown. But if high culture and feeding do produce exceptionally fine exhibition fruit, how seldom does such fruit keep well? Comparatively early ripening varieties, if the fruits be thus large, are soon over and speedily worthless. Of ordinary late keepers very large soft fruits are past their best long before fruits of the same varieties produced under more ordinary conditions are. So, clearly, huge examples are not all gain. *A. D.*

PLANT NOTES.

SUTHERLANDIA FRUTESCENS.

THIS rare Cape shrub has been in full bloom in the open in South Devon, and is very handsome. At the first glance its drooping scarlet flowers and pinnate foliage bring to mind the New Zealand Clianthus puniceus, but both flowers and leaves are smaller. The blossoms are followed by inflated seed-vessels similar to those of Colutea arborescens, and in its native country it goes by the name of the Cape Bladder Senna. It was introduced into this country more than 100 years ago, but is rarely seen in cultivation. It may, however, be grown in the open in South Devon and Cornwall, and on the undercliff of the Isle of Wight. It is a rapid grower, and plants may be had in flower a year after seed-sowing. The individual flowers are about an inch and a half in length, and six are generally borne on a raceme. The leaves are 3 inches in length and are covered on the lower surface with minute hairs.

RIBES LACUSTRE.

THIS little-grown species was recently in full flower, and though by no means so showy as the better-known R. sanguineum, R. speciosum, and R. aureum, it is, nevertheless, a very interesting shrub. It is a native of North America, where it is said to grow in swamps, but in this country moist ground is not a necessity for it as it will grow and flower well in the driest situations. It has slender, spiny, and bristly branches, and its leaves are intermediate between those of the Gooseberry and Currant, and are of a charming light green. The flowers are rather over a quarter of an inch in diameter and somewhat cup-shaped, pale yellow in colour, with a maroon centre from which five red blotches radiate. From 10 to 20 blossoms are borne on a raceme, and these are disposed at a few inches distance along the whole length of the shoots. The plant will attain a height of from 5 feet to 6 feet, and being a pretty, though not a striking object when in bloom, should be more extensively cultivated. The flowers are followed by fruit about the size of Peas which become light red. *S. W. Fitzherbert, Kingswear.*

TREES AND SHRUBS.

THE SPECIES OF LILAC (SYRINGA).

THE following table is extracted from the publications of M. Henry, late of the Paris Jardin des Plantes. It applies to the species only not to the varieties, and may be useful now that some of the species are in flower and the fruits of others are ripening

A. Inflorescences proceeding directly from the wood of the preceding year without the intermixture of ordinary leaves 1

B. Inflorescences borne at the extremity of leafy shoots of the present year. Flowers produced markedly later in the season than those of the preceding group 5

1 { Anthers violet-lilac, ultimately violet; capsule warty: SYRINGA PUBESCENS, Turczaninow.
Anthers yellow; capsules not warty .. 2

2 { Leaves cordiform 3
Leaves not cordiform 4

3 { Blade of the leaves broader than long, or at least as broad as long; thick, shining on both surfaces. Flowering very early: SYRINGA OBLATA, Fortune.
Blade of the leaves longer than wide, less thick and less firm than in the preceding species, not shiny, or shiny only on the young shoots. Flowers produced earlier by a week or fortnight: SYRINGA VULGARIS, Linnaeus.

4 { Leaves narrow, lanceolate, gradually lengthening to the tip or sometimes laciniate. Flowers with slender tubes, not bent back or but slightly so at the upper part, sometimes fertile in the laciniate leaved-form: SYRINGA PERSICA, Linnaeus.
Leaves markedly broader than in the preceding species, oval-acuminate, never laciniate. The flower-tube slightly bent at the upper part; rarely (quite exceptionally) fertile: SYRINGA DUBIA, Persoon.

5 { Leaves markedly bi-coloured, whitish or silvery below, where they have usually a powdery appearance; glabrous on the same side, or furnished with very short hairs, only visible through a lens 6
Leaves paler underneath, glaucous but not silvery; on the same surface are white, thinly-disposed hairs, somewhat long and quite conspicuous: S. BRETSCHNEIDERI Hort.

6 { Flowers produced at the usual season. Flowers with included anthers and deeply placed in the tube. Diameter of the limb of the corolla markedly less than the length of the tube: S. JOSIKÆA, Jacquin, fil.
Very late in flowering. Flowers with anthers reaching as far as or even beyond the throat of the tube. Diameter of the limb fully equal to the length of the tube: SYRINGA EMODI, Wallich.

PYRUS (MALUS) NIEDZWETZKIANA, DIECK.

IN spite of its forbidding name this is one of the handsomest of our spring-flowering trees, owing to the profusion of its deep rose-coloured flowers. It is the subject of a coloured illustration in the *Revue Horticole*. The tree was collected near Kashgar, in Eastern Turkestan, by President Niedzwetzky. Not only the flowers, but the young leaves, and even the young wood, are tinged with red. It is quite hardy.

CRATÆGUS PYRACANTHA VAR. LELANDI.

IN the *Gardeners' Chronicle*, of April, 1901, I gave a short description of a group of C. Lelandi growing in my grounds here, and said much in praise of its beauty and of the multitude of its bright and charming vermilion berries. Since I wrote in that year the group has grown very much and now measures 24 feet by 15 feet in diameter, and is 13 feet high. As an ornamental berried plant few others are anything like equal to it. C. Lelandi is now often seen growing upon walls and as smal. standards. In the latter state, when nicely berried, it is very pretty, but in my opinion the proper place to grow this plant successfully, and where it can be as fully appreciated as it thoroughly deserves to be, is upon an open lawn where it can have ample room to develop and bourgeon out in all directions and never to allow the gardener's pruning-knife to come anywhere near it. When anyone has the good fortune of being in possession of a wild garden, situate in some rough place or mountain side, then by all means let there be introduced a few clumps of C. Lelandi; and some, say, in the form of a shelter hedge, and then let them grow with all the prodigality of untrammelled nature.

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[*] DENDROBIUM BRONCKARTI *De Wildeman*, n.sp. Caulibus elongatis, articulatis sulcatis, basi obscure pseudo-bulbosis, apice paulo inflato-clavatis, apice foliosis; foliis ovatis coriaceis, 11 cm. circ. longis; racemis lateralibus multifloris, circ. 32 cm. longis. pendulis; bracteis ovato-lanceolatis, 18-20 mm. longis; sepalis late ovatis, circ. 26 mm. longis et 10 mm. latis subobtusis, roseo-tinctis; petalis subconformibus sed latioribus circ. 12 mm. latis; labello rhomboideo obtusissimo unguiculato, circ. 20 mm. long. et 15 mm. lato, supra pubescente margine denticulato, disco luteo-aurantiaco, ceterum roseo-tincto.

Indo-China, 1905 (leg. Geo. Bronckart).

[†] DENDROBIUM DARTOISIANUM *De Wildeman*, n.sp. Foliis lanceolatis apice oblique emarginatis, obtusiusculis, circ. 9-10 cm. longis; floribus 3-4 racemosis, breviter pedunculatis, pedicellis bracteatis, circ. 35 cm. longis; bracteis subobtusis 8 mm. circ. longis; sepalis lineari-lanceolatis, albo-luteis, patentissimis, planiusculis, subobtusis, circ. 4 cm. longis et 11 mm. latis; petalis albo-luteis, 4 cm. longis et 15 mm. latis, contortis, margine undulatis, labello indiviso cucullato, subacuto, basi albo-luteo versus medium violaceo apice albo-luteo, intus et extus villoso, mento obtuso.

Indo-China, 1905 (leg. Geo. Bronckart).

The plant is not very particular as to soil, but a little pains taken in providing for it a well-prepared bed of soil will eventually be well repaid by a rich and luxuriant growth. The difference between C. pyracantha and C. p. var. Lelandi is that the latter is evergreen and bears berries of bright vermilion, whilst the former is deciduous [or nearly so] and its berries are not so bright in colour. *W. Miller, Berkswell.*

THE ALPINE GARDEN.

DIANTHUS FREYNII.

To an old admirer of the charming little Dianthus Freynii it was rather pleasant to come across it in several exhibits at the Temple Show, although I have a greater admiration for the typical rose-coloured plant than for the white or whitish forms shown at the Temple. I look upon this as one of the neatest and prettiest of our Alpine Pinks, and, although recognised by botanists as but a form of D. glacialis, it is considerably easier to grow in this climate than that species. It has been said by some to be probably the smallest Dianthus we have, but its flowers are no smaller than some others, dwarf and compact as is the plant itself. When in good condition and well established it makes a dense carpet of small, sharp-pointed, green, not glaucous foliage, and from this rises a number of small, bright rose or deep pink-coloured flowers. It is a choice plant in every way, and forms one of the most pleasing things we have in the rock garden. A very able grower of Alpines recommends growing it on a dry sandy bank, but I have found that in such a position it required a good deal of summer watering, even when partially shaded from the afternoon sun, so that I think it should do best with more summer moisture than it generally receives, although it must have perfect drainage. I found it easy to grow in my former garden, and I had a nice little clump of it there with little attention beyond planting it in a pocket facing south-east, in sand, peat, and grit, and giving it frequent waterings in summer and occasional top-dressings of soil. I observed some difference in the quality of the flowers shown at the Temple, and it will be well for purchasers to secure a good form if possible.

ROSMARINUS OFFICINALIS PROSTRATUS.

Unlike the typical Rosemary, this variety is of prostrate habit and hangs down over the rocks, making a pretty picture with its pointed leaves and pleasing little purplish-lilac flowers. Most of those who have cultivated the variety find it necessary to propagate it regularly by means of cuttings, but it is probable that there are many gardens where it will not be necessary to do this in order to prevent the loss of the variety in the garden. I have no record of the origin of the prostrate form of the Rosemary, which can be grown readily with us in sandy soil, but it was distributed from Mr. Smith's Newry Nursery a year or two ago. *S. Arnott, Sunnymead, Dumfries.*

MAGNOLIAS AT ABBOTSBURY

A few notes on the genus as grown at Abbotsbury, Dorset, the seat of Lord Ilchester, may be interesting.

The following is a complete list of the species and varieties that are cultivated here—but I accept no responsibility as to the correctness of the names of all the varieties, as they are so very much alike:—

Magnolia acuminata, the Cucumber tree, is a specimen about 25 feet high, and flowers very freely every year, it is striking when in full leaf. The variety cordata is only a very small tree at present.

M. Campbelli.—This is a specimen nearly 40 feet high, and this year it only carried one bloom, but in the season of 1905 there were 130 blooms, and it was fortunate to finish blooming before any cold winds or frost destroyed them, as it flowers as early as the end of February or early part of March. It can be imagined how beautiful the plant was when in full flower, the leaves following afterwards. This species I notice requires a westerly position, and being so early should be sheltered from the north and north-east, and, if possible, it should be planted in a moist position.

M. conspicua.—This Chinese species is the most common of all, and our best specimen is about 25 to 30 feet high, with pure white flowers. Alexandrina, I think, must be only a variety of conspicua, with the petals a trifle darker at the base.

M. Lennei is a hybrid between conspicua and obovata, taking the character of former and the colour of the latter. It is very pretty when in full flower; our specimens are very small at present.

M. nigra.—In the *Kew Hand List* (trees and shrubs) this is described as a variety of Soulangeana. Our specimen is 10 feet high, but is not nearly such a good shaped tree as Soulangeana, and the flowers are larger.

M. Norbertii is another hybrid between conspicua and obovata, but has not yet flowered with us.

M. Soulangeana.—This is one our most handsome trees, the best specimen being 25 feet high and 15 feet through, and carrying hundreds of blooms every year, thus forming a most striking object.

M. glauca.—Our trees of this species are very small, the best being about 5 feet high. It is commonly known as the Laurel Magnolia.

M. globosa.—I cannot find any particulars about this species, either in the *Kew Hand List* or in *Nicholson's Dictionary*, but it is only a small specimen, so I fancy it is a local name. It is deciduous and possibly a form of conspicua.

M. grandiflora.—This is too well known to require describing. Our best trees are about 16 feet high; exoniensis and ferruginea are varieties of the type.

M. hypoleuca.—This is a handsome tree quite 30 feet high, and in 1904 it bloomed for the first time; it is very like tripetala but much larger. The petals are 9 inches to a foot in length, of a creamy white, lined with a purple cup about 6 inches in diameter, and very sweet-scented, but unfortunately it lasts a very short time in bloom. Our tree has several blooms on it, and if good this year I will send some to the fortnightly meeting of the Royal Horticultural Society or to the office of the *Gardeners' Chronicle*. It is deciduous, and when in leaf is particularly striking. See *Botanical Magazine*, June, 1906, tab. 8,077.

M. macrophylla.—I think this must be a form of tripetala.

M. obovata.—The flowers are chocolate purple, very fragrant. Our tree is about 5 to 6 feet high.

M. purpurea.—This is a variety of obovata, very allied to it.

M. stellata.—In the *Gardeners' Chronicle* of April 28 was a plate of the specimen in the Temperate House at Kew, and it was stated that it rarely exceeds 4 feet in height. Our best tree is 11 feet high and 12 feet through, quite in the open and facing south—and this year it has carried some thousands of blooms. Not one of our specimens is less than 7 feet high. As this species should be found a place in every garden, facing due south being certainly the best position in which to plant it.

M. Thompsoniana.—Our specimen is a very old one indeed, and is over 30 feet high, flowers very late, and the blooms are very fragrant. It is a very beautiful tree with its glaucous, semi-deciduous leaves.

M. tripetala, the umbrella tree, is beautiful when in flower and foliage. Our best specimen is about 20 feet high and flowers very freely.

M. Watsoni.—The *Kew Guide* places this as a synonym of parviflora, but our trees are quite different. Watsoni flowers with us in May, and is very fragrant. The best tree at Abbotsbury is 16 feet high.

M. alba superba and *M. amabilis* have not yet flowered.

M. André Leroy.—This is very disappointing. our specimen being 10 feet high. It flowered here for the first time, but it is a shade darker than M. conspicua, but not enough to constitute a distinct form.

M. Kobus.—This is probably after M. Campbelli, the earliest flowering Magnolia there is. Our specimen is 20 feet high, and the small, very fragrant blossoms reminds one of Tuberoses. It is very free flowering.

M. Broggoni [?].—This is also very disappointing, it being only a slight variety of M. conspicua.

M. fuscata (syn. Michelia fuscata), a low-growing species, but very interesting with its little yellow and very sweet blooms.

M. gigantea and *M. gracilis* have not yet flowered, but I think the latter is a variety of conspicua; if anything it has smaller leaves, but it certainly has the character.

M. parviflora.—This at Abbotsbury is very like hypoleuca, but has not yet flowered here.

M. Exmouth, double.—A variety of grandiflora and very fragrant.

M. sempervirens.—This is a very distinct variety, but it has yet not flowered, it being only a very small plant.

M. cordata.—A variety of *M. acuminata.*

M. compressa, now included under the genus Michelia, is a very distinct plant, with its dark shining leaves and glaucous surface.

M. longifolia is a synonym of glauca, but the leaves are a trifle longer.

Magnolias are very interesting, and if planted in sheltered positions with plenty of peat and leaf soil should do well almost in every county, as they are fairly hardy, but owing to spring frosts the early blooms are apt to be destroyed. *H. Kempshall, Abbotsbury.*

Making the Best of Things.—An enterprising wholesale florist in the vicinity of San Francisco, who had formerly been in the dairy business, has, says the *Weekly Florists' Review*, purchased several cows since the earthquake and the fire, with the intention of selling milk until there becomes a demand again for inside stock of flowers. He is keeping several houses in order for business that may come later in the season, and at the present time is feeding his entire crop of flowers to his cows, to use the American idiom. They are probably the best fed animals in America. He cuts about 25 dols. worth of flowers every day and feeds these regularly to his four cows in addition to other fodder. How long the cows will enjoy these dainties is hard to say, but we are told they seem to appreciate them highly.

OAKLEY COURT, NEAR WINDSOR.

Oakley Court (fig. 154), the residence of Sir William Avery, Bart., stands about midway on the main road between the Royal Borough and Maidenhead. The River Thames skirts the whole of its northern boundary, along which is situated the sequestered walk seen in fig. 155. The residence is quite hidden from the main road, but on the riverside the lawn leads from the house to the water's edge, with only a few interruptions, provided by the handsome Conifers seen in figs. 154 and 156. The mansion is a modern castellated stone and brick building in the Gothic style. It possesses some fine mullioned windows, and is surmounted by a tower which affords a fine panorama of the surrounding country. From a spot near to the foreground of fig. 155 a good view of Windsor Castle is obtained. At this point a fishing stage abuts over the river, and here one can enjoy a delightful view of the Thames, with Windsor in the distance.

A paddock occupies much of the area between the main road and the residence, which is approached through a winding avenue that is lined with many tall Conifers, most of which are handsome examples. Some of the more notable trees are those of Abies pinsapo, Pinus excelsa, Cedrus deodora, Pseudotsuga Douglasi—of which there are several handsome specimens—Pinus cembra, Abies lasiocarpa, and Cupressus Lawsoniana. These trees have been planted at a sufficient width apart to enable them to grow unrestricted, and as a consequence the trees are of that beautiful pyramidal shape that gives many Conifers such an imposing appearance. Clumps of ornamental trees and shrubs also find a place in the avenue, which, viewed from either end, is of an imposing nature.

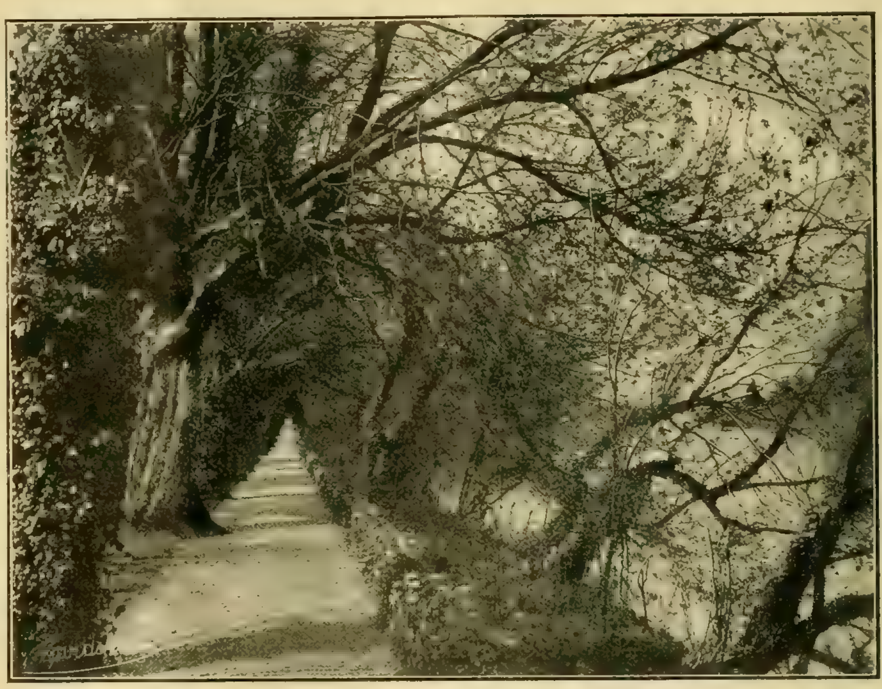

Fig. 155.—Oakley Court: the riverside avenue.

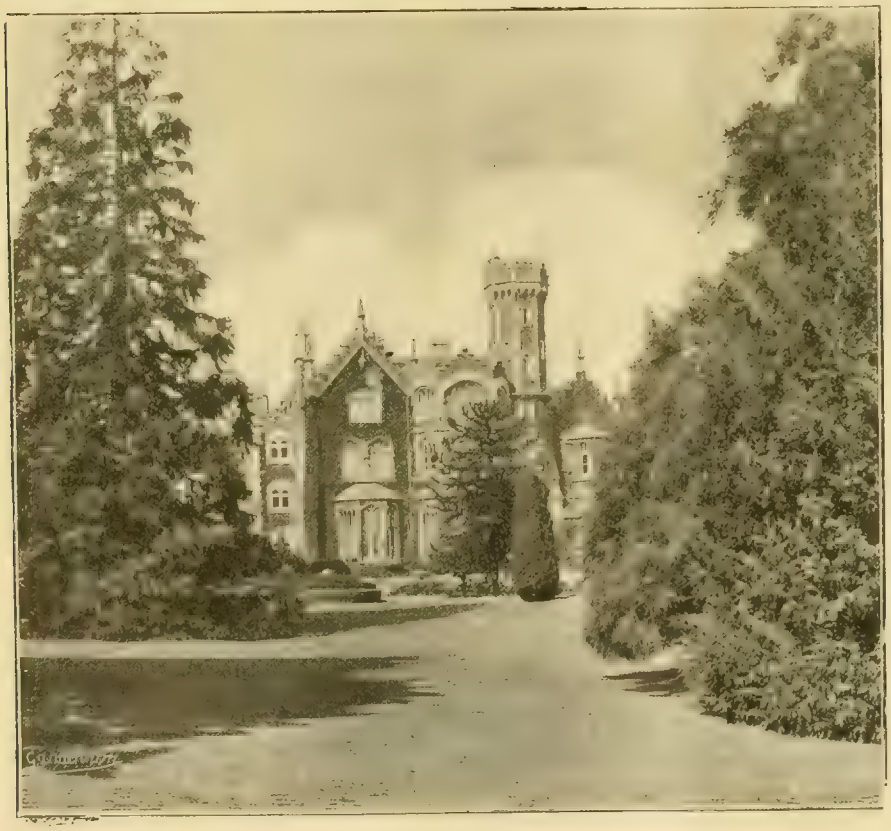

Fig. 154.—Oakley Court: the residence.

Fig. 156 affords a view from the terrace round about the mansion. To the left of the fountain is seen a glimpse of the river, and at the background and on either side are stately examples of Conifers. Sequoia sempervirens makes a fine tree over 80 feet high. The fastigiated Cupressus Lawsonianus erecta viridis, with its shaft-like branches, forms a fine object. Wellingtonia, Araucaria imbricata, Biota orientalis, the ornamental Juniperus japonicus, albo variegatus, Cupressus Lobbi, and Libocedrus decurrens are all flourishing, and add grandeur to the spot. We must not omit to mention an example of Taxus japonica, which is very fine, and a very fine Weeping Beech. Another tree which called for admiration was the golden Juniperus chinensis.

Other smaller trees of trained Hollies, Columnar Yews, and Standard Bay Laurels are planted at points of vantage, but without overcrowding.

At the rear of the fountain (fig. 156) will be noticed an archway. This leads for several hundred feet along what is known as the long walk—a narrow woodland glen, with archways at intervals, trained with Clematis and Ivy, and overhung for its entire length with woodland trees. This must not be confounded with the walk shown in fig. 155. A narrow parapet divides this latter walk from the river bank, which is planted to the water's edge, and on the opposite side beneath the trees are being established colonies of woodland flowers such as Primroses, Bluebells, and Anemones, with many clumps of bulbous plants. The trees along this walk are of various kinds, such as Willow, Lime, Horse-Chestnut, Oak, Elm, and others.

Although not shown in our illustration, a summer-house breaks the walk midway, and another is situated near the fishing platform alluded to. On the opposite side of the residence is a range of decorative plant houses. The main entrance and courtyard is hereabouts, and the courtyard at the time of our visit was filled with the fragrance of yellow Wallflowers, that were mingled with blue Forget-me-Nots, a very pleasing combination. The plant-houses form a covered way to the drawing-room.

The first two are utilised as greenhouses, and are known as the "show" houses. At the time of our visit they were bright with Cinerarias, Primulas, Schizanthus, Pelargoniums, and other showy greenhouse flowers. The scarlet Paul Crampell Pelargonium was very fine, and there were some good specimens of the new Rehmannia angulata. Another good zonal Pelargonium seen was Master Eric. It was raised in these gardens, where it is much grown. It is an admirable winter flowering variety, and is excellent for summer bedding purposes. The large, showy trusses of flowers are a shade of pink. The greenhouses lead into a small Palm house, and next to this is a compartment entirely filled with Crotons. Beyond the Croton house is the stove house, up the roof of which are trained climbing plants, including a fine specimen of the yellow Allamanda Hendersoni.

Some well-grown plants of Clerodendron Balfourianum were also seen, with the usual array of ornamental foliage, and decorative plants of a heat-loving nature.

A door from the stove leads through a cool Fernery into a delightful winter garden. At the far end are the casement windows of the drawing-room, and when one steps from this chamber into the cool, delightful retreat of the winter garden the effect is charming. A fountain displays its stream of water and around is a setting of plants, some of which trail over into the basin beneath. In the centre of the building is a raised portion of rockwork up which one may clamber, and on the top find bowers with seats, beneath a setting of Palms, Ferns and flowering plants, with Solanum jasminoides, the variegated Cobaea scandens, Ficus repens, and other climbers forming a drapery from the roof. The corridors and nooks around are brightened with flowering plants, and up the slopes of the rockery are Ferns, Mosses, and many trailing subjects. The whole is transformed into a fairy palace at night-time by the aid of electric lamps, which light up innumerable recesses and nooks. Among the plants was a specimen of Encephalartos villosus carrying a fine cone.

Numerous flower beds are disposed around the terrace and on the lawns, which, early in May, were filled with Wallflowers, Violas, Anemones, and other spring bedding subjects. It was too late to enjoy the spring bulbous plants, which are plentifully planted in the beds and borders. If we retrace our steps up the main drive and turn to the left, past the top of the paddock, we shall arrive at the gardens proper, wherein are found the fruit and kitchen quarters, with the fruit houses, &c. On the way is a pleasing piece of landscape in the form of a wide dell, which leads round to the lawns on the riverside. The roadside to the left has been planted with rows of choice Conifers, which succeed so well here; and these in time will quite separate the paddock from the more ornamental grounds. Our walk leads us past the gardener's house and the bothy (fig. 157). The gardener's house is seen to the left, with the young gardeners' quarters in the background. This latter building is superior to the standard of accommodation usually apportioned to the garden staff, as the view of the exterior betokens, and an inspection of the interior quite confirms the good opinion. The central gabled portion is the gardeners' library and billiard room, which has a comfortable interior with parquet flooring and cosy chimney corners. A spacious mess room is to the left of the billiard room, and on the right are the sleeping quarters, which have been made very comfortable.

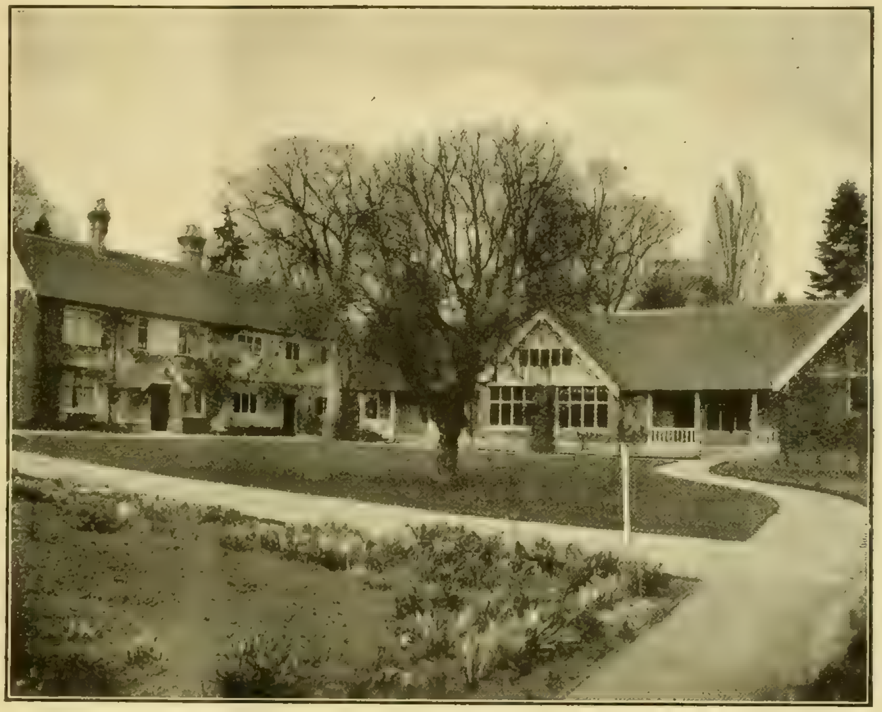

Fig. 157.—THE GARDENER'S HOUSE AND THE BOTHY AT OAKLEY COURT.

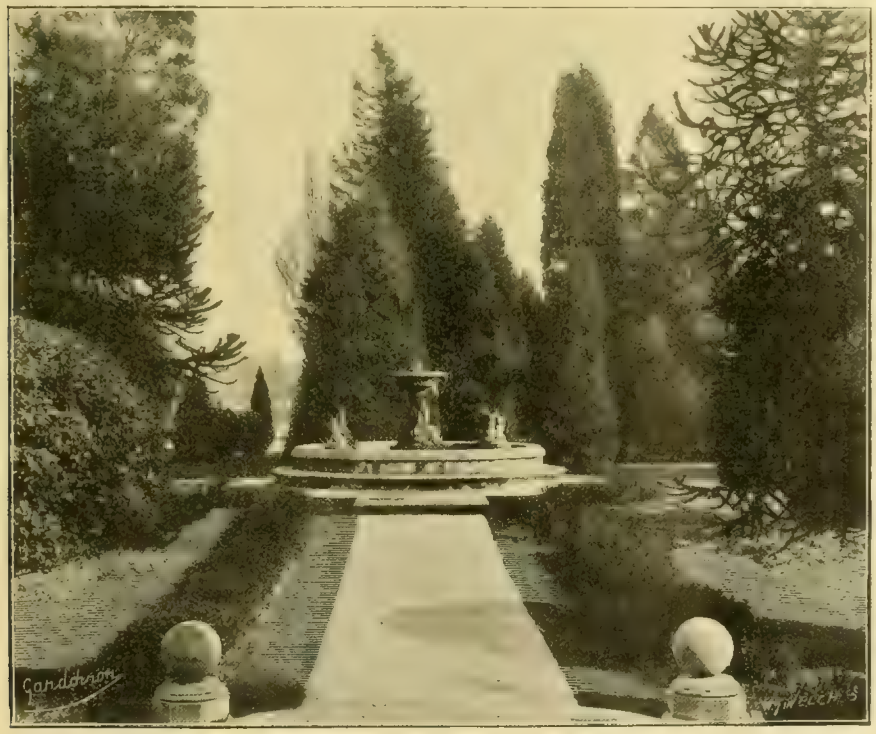

Fig. 156.—VIEW OF THE FOUNTAIN FROM THE TERRACE AT OAKLEY COURT.

Running about parallel with the river is a range of fruit houses about 300 feet long, that is backed by a tall wall, to the rear of which are Mushroom-houses and other structures. The glass range is divided into compartments, which form vineries, Peach-houses, rosaries, stove, greenhouse, &c. At right angles to the range are three light pits. The first is devoted to the culture of Carnations, principally of the Souvenir de la Malmaison type, including Oakley Court Scarlet, a variety which originated in these gardens. Pits around were filled with Herbaceous Calceolarias, show Pelargoniums, Freesias, &c. The other two pits are devoted to Melons. Five houses are utilised for Melon growing, and the plants were seen in all stages. They were heavily cropped, and in perfect health. The varieties grown are Hero of Lockinge, Victory of Bath—"Oakley Court variety"—a selection; Royal Favourite and Ringleader. The central pit leads from the stove quarter of the range, in which we noticed some well-grown Caladiums and Gloxinias. The ornamental-fruited Rivinia was flowering in this house. This is found very useful for decorating the conservatories later, when the long racemes of berries are coloured brilliant scarlet. Besides Melons, much glass is devoted to the culture of Nectarines, Peaches, Figs, Grapes, Tomatos, Strawberries, &c. The famous Lockie's Perfection Cucumber was raised in a small pit at Oakley Court. The structure is still in good working order and, at the time of our visit, had just been cleared of a crop of Veitch's French Climbing Beans, that had been planted in boxes and trained up the roof, giving splendid results—picking being just finished. A river-side residence would be incomplete without its boat-house, and this is found useful for other purposes than that of storing boats, for we saw it filled with shrubs that had been forced, and which were thus being gradually hardened before their final shift out-of-door.

In addition to other quarters provided for vegetable growing is a walled-in kitchen garden, wherein is a fountain in the central walk, and some well-stocked borders of herbaceous plants, and large beds of Roses. These flower-beds and borders are valuable for furnishing a supply of blooms for cutting, and they obviate the necessity of robbing those in the ornamental grounds. Rows of all the usual culinary vegetables, including Asparagus, looked in a healthy and promising condition, and the favourable appearance of the hardy fruit trees betokened the all-round capabilities of the head gardener, Mr. Geo. F. Cooper, to whom we are indebted for our tour of inspection. The illustrations are from photographs by Mr. J. Gregory.

VEGETABLES.

ASPARAGUS.

I am sending you a sample of Asparagus, grown under the most ordinary conditions, such as the garden cultivation of the Potato and with no more manure.

I have four rows, two of them were sown five years since, and have never been transplanted. The other two rows were made by thinnings from the two rows that were sown. Drills were drawn out in the same manner as for Potatos, but deeper, and the young plants were planted in the bottom of the drills. The drills were for the time left open until the young plants were well up, when they were ultimately filled in by hoeing, &c., to keep clear of weeds. They are grown in single rows some distance from each other, with crops between. The soil is light, sandy, and shallow, resting on red sand, which is only 12 inches or 14 inches deep. I discontinue cutting by the middle of June, that the tops may have good time to mature the crowns for the following year. *John Garland, Broadclyst, Devon.* [Exceedingly good produce.—Ed.]

IMMATURE SEED POTATOS.

There are still heard many complaints as to the poor growth seen on many breadths of Potatos, arising, as seems now to be satisfactorily shown, from over maturation of tubers, thus rendering them, if good for food, at least much less fitted for reproductive purposes. Permit me to invite growers, who have any old tubers unplanted, whilst there is yet ample time, either to plant those at the end of the month, to have the tops green and killed by frost in October, or to lift a few roots of any one or more varieties whilst the tops are green and the tuber skins tender, the tubers also being full of sap, storing these immature tubers in the ordinary way in shallow boxes. Next spring plant them side by side with seed tubers fully matured of the same varieties. Only one or two experiments so far have been made, the completest being, perhaps, those of Messrs. Sutton & Sons, Reading, and at the Reading College by Mr. C. Foster; and, so far, in each case, the immature tuber growth greatly excels that from the fully ripened tubers. *A. D.*

PARSLEY AS AN EXHIBITED VEGETABLE.

Is not the difficulty raised by Mr. J. A. Simpson with reference to the place of Parsley in vegetable collections rather far fetched? The use of Parsley as a carpet for show vegetables is so common that no one would think of regarding it as a competing vegetable. Still farther as it is a flavouring herb, and not served to table as a cooked dish, no one seems to regard it in the same category as are ordinary vegetables. At the great exhibition at Edinburgh last September, whilst Parsley was commonly employed as a carpet for other products, no one included it in pots or otherwise as a competing item in any collection. It is not possible to conceive of any judges who would disqualify a collection of vegetables because Parsley was used as a carpet, thus making one item more than was required by the schedule. *A. D.*

I may inform Mr. A. Simpson that I did not overlook the fact that Parsley is used for garnishing vegetables, not only on this side of the Border, but so far as I have been able to observe it has been largely, and I think rightly, used by our Scotch friends in Scotland. It is somewhat out of place to consider Parsley that is used for garnishing purposes only, as a vegetable. With the aid of Parsley, collections of vegetables can be made to look much more attractive to the public, and as this is generally allowed there is no reason why any exhibitor should be debarred from using it. It would be just as reasonable to argue that in the case of table plants, for instance, Selaginella, or any other suitable creeper, must not be allowed for surfacing the pots. *W. J. Pritchard, Elstree.*

ELLAM'S CABBAGE.

I have grown this variety for a good many years, always depending on it for early cuttings, but every year we had a good many plants run to seed. Another variety, Suttons' April, was tried by the side of it, and I have now discarded Ellam's in favour of "April." If your correspondent, Mr. Mayne, would try Suttons' April and Flower of Spring he would have no cause to regret the change. I have grown this year 600 plants of "April" and 2,800 plants of Flower of Spring, and not a single plant has run to seed. A few weeks back Mr. A. Dean, when walking over the bed, said, "If you have not any bolted you have one rogue amongst them," which there certainly was, but only one out of 3,400! I always make two sowings, one in the first and another in the third week of August, and find these dates quite early enough for this locality. *J. B., Hackwood Park Gardens, Basingstoke.*

I have been especially interested by the correspondence in the *Gardeners' Chronicle* during the past few weeks, for Ellam's Early Dwarf Cabbage first came to light (so to speak) in these gardens. As foreman here for the past four years, I have particularly noticed in all the plots allotted to this spring Cabbage—and in passing I would say only Ellam's Early is grown—that not a single plant has bolted. In conversation last week with one of the old "hands" in the kitchen garden, who was with the late Mr. Ellam at Bodorgan, he told me they had never had a spring Cabbage to surpass it for non-bolting. I was pleased to read Mr. Beckett's notes in praise of the same, and with him I agree as to the non-bolting character of the true Ellam's Early Dwarf Cabbage. *G. S. Jordan, Bodorgan Gardens, Anglesey, N. Wales.*

I fully endorse Mr. Beckett's remarks with reference to the good qualities of Eliam's Early Dwarf Cabbage. I find it second to none for early supply. It has good flavour, and is remarkable for its freedom from running to seed. Flower of Spring follows Ellam's in succession, and is much larger. But for early supply the true variety Ellam's Early Dwarf will be difficult to excel. *L. E. Walker, Barton Hall Gardens, Bury St. Edmunds.*

CULTURAL MEMORANDA.

MARANTA TIGRINA.

This is a desirable addition to the list of ornamental leaved stove plants. It is of compact habit and sturdy growth, producing ovate lanceolate leaves—from 9 to 12 inches high—on petioles, sheathing for their entire length. The leaf-blades are of a velvety, lustrous, grass-green colour, strikingly marked on each side of a grey midrib, with broad transverse bars of rich deep olive green, the marking dividing near the undulate margins into two tips. This, like all the varieties of the Maranta, requires to be grown in a warm and moist atmosphere during active growth, and to be afforded a slight shading during the heat of the day. *H. W. Ward, Rayleigh.*

The Week's Work.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Primulas.—The secret of success in Primula culture rests in the plants making steady and continuous growth throughout the whole period of their development. They must suffer no check through either an excess of water or drought, through repotting the plants before they need it, or leaving the small plants too long in a position that causes the foliage to become drawn. Mistakes of the nature indicated above would surely interfere with the progress of the plants, and when once Primulas have received a check they do not readily start again. Extremes of temperature should be avoided; coolness in summer is desirable, and, when established, the frame lights may be removed at night when the dews are most refreshing. Just enough warmth is required in winter to keep the air moving and the roots active. Some growers, with a view to producing large flowering plants, sow seeds in September of the previous year; others sow early in the year, and grow on in heat for two or three months to have them strong by May (though they are sometimes weak). But if sown in April or early in May, and careful attention be given to the plants, they can be had in the best form by November and onwards, and will excel in competition those that are at least six months older. Now that pits and frames are capable of affording ample room, there is no need for overcrowding the plants.

Preparing Plants for use in Winter Decorations.—Where there is a large demand for plants for house decoration through the winter months, the present time affords an opportunity to consider the stock of plants suitable for this purpose. Selected plants of Codiæums (Crotons), especially those with narrow leaves, should be grown in 5 and 6 inch pots, elevating the plants close to the glass, in which position they will grow well and develop high colouring. Pandanus Veitchii, Panax Victoria, Dracænas (especially those of the green-leafed section), Asparagus plumosus, Gesneras (the latter are highly ornamental objects in the winter months) are all useful subjects, while there are many varieties of Ferns which may be selected, including Adiantum gracillimum, A. cuneatum elegans, and Nephrolepis davallioides furcans, the latter especially suited for putting into large vases. Selaginellas and small seedling Ferns should be grown in quantity for surfacing when plants are used singly in vases. Much anxiety will be averted by looking ahead, and preparing whilst there is good time for the requirements of the establishment later in the year.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Melons.—The last of the earliest batch are now ripening off, and any which are still left in the house and show signs of cracking round the stalk may be cut and put on a dry, sunny shelf to properly finish before using them for dessert. Ringleader has done splendidly here this season, and is fully three weeks in advance of "Earl's Favourite" in time of ripening. These two varieties have green-flesh, and possess exquisite flavour, but if I had to grow one sort only, I should give "Ringleader" preference. This variety has a strong constitution, the flowers set very freely, and the fruit is well netted. Earl's Favourite forms a good succession, and its fruit can be kept in good condition for a considerable time, when fully ripe, if placed in the fruit room. It is much easier now to keep up a constant supply of good flavoured fruits than earlier in the year. The cultivator should have young plants ready for filling vacancies, as they occur, taking away the exhausted soil and replacing it with rough turfy loam, lime scraps, and a little bone meal. When this compost has been in the house for one day and night, it will be in a fit condition for receiving the young plants. The plants grow much better if planted out as soon as they have made two to three leaves each; when left too long in the seedling pots, the roots becomes matted together, and they never seem perfectly to get over the check. Plants that are carrying heavy crops and are growing in a limited space should be given a plentiful supply of weak liquid manure, at least three times a week, especially when the fruits are swelling. The house should be closed each afternoon with plenty of atmospheric moisture. But houses in which the fruits have reached their full size and are approaching the ripening stage, must be more freely ventilated during bright days, and the atmosphere should be kept in a less moist condition.

Melons in Frames.—Plants that were put out at the beginning of last month will have made a considerable amount of growth. When three or four fruits have set on each plant and are swelling away, the remaining lateral growths should be cut out. As soon as the bottom heat is found to be declining, let the frames be relined with long litter and grass from the lawn cuttings. Give almost daily attention to pinching the shoots, and also to the watering and syringing of the plants. The last sowing should now be made, as it is seldom that fruit ripened late in the season is of much value for dessert, though they may be utilised in the kitchen. Plants from this late sowing must be encouraged to make strong, sturdy growth. Ventilate the structure freely, and do not at first employ much artificial heat.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Barrels of Flowers.—Now that the stress of bedding-out and the furnishing of vases is nearly if not entirely completed, time might be found to devote to a less familiar mode of flower garden decoration, viz., barrel gardening. Those who have not employed this style of garden adornment will be agreeably surprised at the very pretty effects that can be produced by it if judiciously carried out. Petroleum barrels, with the insides burnt out sufficiently to get rid of the oil in the wood, are admirable for the purpose, though it is possible to obtain from certain firms barrels specially constructed. All that is requisite in preparing the barrels is to ensure good drainage by boring holes at the bottom and laying 2 or 3 inches of rough material to prevent these holes becoming clogged, and boring four to six tiers of holes all round the barrel in which to insert the plants for covering the roots. A drain pipe or a wire cage in the centre reduces the amount of soil which otherwise—and unnecessarily—would have to be used for filling the barrels. The size of the holes and the number of them depends upon the plants it is intended to use; but the important point is to completely clothe the barrel from top to bottom. As to suitable plants for this kind of work, many will readily occur to the reader as being appropriate, but, naturally, those of a drooping, trailing habit are the best. Barrels of flowers tastefully designed, and disposed about a flower garden, or placed to make a feature in a particular portion of the garden, never fail to elicit admiration, and become a source of pleasure and attraction. A novel and charming way of using barrels is to create columns of flowers, by placing several on the top of each other. Three barrels placed on end, one upon the other, make a column fully 12 feet in height. In these gardens last year two columns constructed thus were planted with Souvenir de Charles Turner Ivy-leaved Pelargonium. In the autumn the barrels, which were previously painted green, were completely hidden with the foliage and flowers. The effect was not only novel, but exceedingly attractive, and was greatly admired. The barrels for the columns should be made up, planted, and remain in the position in which they are first placed. The lowest barrel is filled completely with soil, always using a compost of rich friable loam, leaf-mould, and cow manure. The barrel above has a narrow drain pipe running through to the top of the lowest barrel, while the third and top one has two pipes, one connecting with the pipe in the second barrel, while the other simply leads to the surface of the second barrel. By means of these various drain pipes water can be freely conducted to each, an item most essential to the success of this phase of gardening.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Watering.—Now that the weather has changed for the better, the affording of water to crops must be given daily consideration. Plants newly "set out" are bound to suffer more or less during hot periods, and to help them to overcome this nothing is better than the practice of "puddling" the plants before planting. A preparation of lime, soot, clay and water is made to the consistency of paint, and the roots and stems of the young plants are dipped into this before planting. Treated in this manner, the plants will suffer less check, and consequently they will start into growth earlier. After watering crops of the above description it is a good practice to run the hoe amongst the plants as soon as possible to prevent the soil becoming caked. Peas will require much water both at the root and on the foliage, and a mulching of long litter should be applied on light, porous soils. Do not apply driblets of water, but thorough soakings.

Onions, Leeks, and Celery intended for special purposes should receive great care, not only in watering, but in every detail in their cultivation. While all of these crops require plenty of moisture, they may be easily spoiled by stagnation, and, the ground being heavily manured, it will not be so likely to get dry except on the surface, which can easily be kept right by affording dampings in the evenings after warm days. Therefore, avoid giving too much water to these crops. Rain water should be used when possible, and if clear soot water is added to it so much the better; but be careful that all the sediment of soot is drained off before using. Seedling Onions sown in the open in the spring will require the soil between the rows to be kept loose and clear of weeds. It is a common practice to thin out the plants to 4 or 5 inches, but this is not necessary when large ones are also grown as a separate crop. The seedlings usually get partly thinned by daily drawings for use in the house, and even if they remain fairly thick they will finish up perfectly well, and of a proper size to keep well. For some years I have given up thinning to any great extent, and it is certainly more profitable not to thin severely unless a few bulbs are wanted much larger than the rest. The Onion Fly will be in full flight now, and to prevent them damaging the crops soak a quantity of sand or sifted charcoal in paraffin, and sow the charcoal twice each week over the plants when the dew is on them to prevent the fly alighting on the plants. The same remedy may with advantage be applied to Celery before it becomes affected with the Celery Fly.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Bush and Pyramid Trees.—Where there is black aphis on the foliage this should be cleaned off at once with a solution of Quassia Extract, applied with strong force from the garden engine. Early varieties may be thinned, especially such varieties as Beauty of Bath, Irish Peach, Lady Sudeley, and Mr. Gladstone. The last-named variety ripens very early, and if thinned early the fruits attain to a fair size. Early Harvest is also a very good early variety, and is, moreover, a free grower. Culinary varieties are all the better if thinned early, especially such large-growing varieties as Lord Suffield, Keswick Codlin, Lord Grosvenor, Domino, and Frogmore Prolific. These are pretty free growers that set the fruits well, and are bearing good crops this season. When attending to the trees be ever on the alert for American Blight, and have a brush and some nicotine soap ready into which a small quantity of petroleum has been put. When discovered, brush hard with this preparation, and it will destroy the pest. By persistent attention the pest may be eradicated from the garden.

Tieing and Nailing.—Trees are now growing very rapidly, and if the stopping and disbudding has been carried out, the remaining shoots will have gained considerable strength, and should be either tied or nailed to the wall or wire, and in the direction they are intended to go. On those trees that have filled their allotted space the branches may be stopped, but upon newly-planted or smaller trees they should be nailed in their whole length. Cordon Cherries and Pears may have the points nailed in their whole length, pinching out the point when it has reached the top of the wall. Shoots coming from the lower branches and that are strong should be retained in order to furnish bare places that may exist.

Alpine Strawberries.—These and the perpetual fruiting varieties may be planted out at 6 to 9 inches apart on a partially shaded border. If the soil is of a heavy character mix with it some lighter materials. At a later period the plants may be put out at 1 foot apart in the fruiting quarters. Those plants that are fruiting should be afforded a little manure water occasionally, taking care not to wet the foliage with it. A little soot water may be applied to the roots occasionally. If fruit is desired later, remove all the flowers, as these plants are capable of throwing up fresh flowers until autumn.

The Raspberry-Blackberry.—The Mahdi is a great bearer, and should be treated liberally when fruiting heavily. Thin out the young growths at the stool similar to Raspberries, retaining only those that are required for another season. These fruits usually commence to ripen in July, and continue for several weeks. The Japanese Wineberry, Loganberry, &c., require similar cultivation, but those which are strongest-growing must be most severely pruned.

Elæagnus edulis (longipes) is sometimes used for the making of preserves. The trees should be given manure water.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Dendrobiums.—Such Dendrobiums as D. Wardianum and D. crassinode have now made considerable progress with their new growths, which in turn are producing new roots from their swollen base. Any of these plants which have filled their pots or pans with roots may now be afforded more room. Avoid causing them any unnecessary disturbance; carefully break the old pot from each plant and put the roots and drainage material just as they are into a larger pot, into which additional drainage material has already been placed; fill up the remaining space with a mixture of fibrous peat, sphagnum moss, and small crocks. Afford the plants plenty of water until the pseudo-bulbs are fully matured. A light and well-ventilated position near to the roof glass in the intermediate house is the best place for them.

Cypripediums.—Cypripediums that require most heat, as C. Lawrenceanum, C. Rothschildianum, C. Stonei, C. Curtisii, C. grande, C. superciliare, and many others which have finished blooming may require more root room, or to be divided to increase the stock. None of these plants should be permitted to continue in a pot-bound condition. The pots should be made about one-third full of drainage material, and the potting compost may consist of peat, fibrous loam, sphagnum moss, and some broken crocks. Keep the plants near the roof glass on the shadiest side of the house. For a few weeks after repotting keep the compost only just moist; a light spraying overhead several times a day will induce growth, and keep the foliage fresh and clean. C. superbiens (Veitchii), an old but handsome species, now in bloom, prefers a well-shaded position in the Cattleya house, and should not be allowed to become dry at the roots at any time.

Cypripediums, &c. in Intermediate House.—All of the cooler growing Cypripediums in the intermediate house are now in full growth, and the plants should be well supplied with water. Judicious spraying overhead is beneficial to them, and their immediate surroundings should be kept moist at all times. The shade-loving Bolleas, Pescatoreas and others of that category, require the same kind of treatment. These rare species will at no time successfully stand the least direct and clear sunshine.

Insect Pests.—Thrips and red spider not only disfigure the foliage of the plants, but are almost fatal to some species. At this season thrips multiply very rapidly, and must be kept in check. The remedy against them is to vaporise the houses periodically, there being several liquid preparations frequently advertised in the *Gardeners' Chronicle*. Previous to using the vaporiser, close the house early, keep the shadings down if the sun is bright, and cause the atmosphere to become moist, as the fumes will then be the more effectual. Should red spider make its appearance, thoroughly sponge the leaves, stems, and pseudo-bulbs with some safe insecticide. Various scale insects should be constantly sought after and eradicated with brush and sponge. Woodlice may easily be trapped by laying pieces of Potato or Carrot upon the compost, which should be constantly examined. Numbers of woodlice may also be caught by watching the surface of the compost shortly after the plants have been watered.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY,	June 20	Roy. Hort. Soc. Exhibition of Table Decorations, &c. Yorkshire Gala, York (3 days).
THURSDAY,	June 21	Linnean Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—61·3°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, June* 13 (6 P.M.): Max. 62°; Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 14 (10 A.M.): Bar., 30.2; Temp., 55°; *Weather*—Overcast.

PROVINCES.—*Wednesday, June* 13 (6 P.M.): Max. 65° South-west Ireland; Min. 53° North Ireland.

SALES.

WEDNESDAY—

Palms, Plants, Standard Bays, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—

Imported and Established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Vegetation of the High Alps.

Now that many of our plant-loving readers are contemplating a visit to the Alps of Switzerland or Tyrol they may be interested in knowing that M. Ch. Flahault has recently contributed to the *Revue Mensuelle du Club Alpin Français* an interesting paper on *Les hauts sommets et la vie végétale*. This paper is of interest not only to those fortunate people who can visit the Alps at this season, but also to those stay-at-home gardeners who are interested in the culture of alpine-plants.

The Professor describes the conditions to which the vegetation of the High Alps is subjected as those of intense light, of drought, low temperatures, and constant extremes. The soil, frozen for months, becomes absolutely dry, and woody forms are soon reduced to a mere network of very fine branches penetrating into the surface of the soil or into moss.

It is a curious instance of adaptation to circumstances that certain plants which in the plains flower and fruit in the course of a few weeks are not able to do so in the short growing season of the mountains. Many species even acquire the faculty of perpetuating themselves without forming flowers, and increase by means of the vegetative apparatus and become perennials. Poa annua, for instance, belies its name and becomes propagated by its vegetative organs.

The exterior characteristics of plants at high elevations also show how they adapt themselves to the climate. Thus there are forms, such as Carex, with close tufts of foliage, whose shoots are protected by the old leaves, or Grasses (Nardus stricta), dwarf Rushes (Juncus trifidus), all with deeply-penetrating roots.

Plants of the snowy regions are of two principal forms: 1st—Those producing long stolons that thread their way between the stones and soon bear leaf-buds terminated by flowers such as Thlaspi rotundifolium, Hutchinsia alpina, Cerastium alpinum, etc. 2nd—Those which form a mass of shoots springing from the root, each tuft attached to the humus below the gravel by an often long and solid root as Saxifraga oppositifolia, Linaria alpina, Alsine recurva, Galium helveticum.

The rock-flora shows a third type. The plants are tufted, the stems short, the leaves small and close. The branches are usually numerous and leafy, united into compact rosettes. The "cushion" plants form hemispherical masses fixed to the rock by a root creeping along into the fissures. The numerous branches, pressed closely together, all keep at about the same level, only the flowers or the fruits rising above them: Silene acaulis, Saxifraga exarata, bryoides, muscoides, and cæsia, Draba pyrenaica, Androsace helvetica, imbricata, etc., are typical examples. Then there are the Composites, Lobeliaceæ, and Violets of the Andes, the Veronicas, Myosotis, and Composites of New Zealand. These "cushions" are often large in diameter, but quite regular in form; they leave no parts exposed to winds, the dead leaves die round the shoots, remaining moist for weeks, absorbing by capillary action the water which rises to the surface of the soil and storing it as a sponge would do. Many of these "snow plants," like the all-familiar Edelweiss, have leaves covered with felt-like down, which still further checks their transpiration. Androsace pubescens and others; the Wormwoods known as "Genepis," the black Achilleas and Myosotis of the High Alps (Eritrichium nanum) are examples. M. Flahault says, in conclusion, that the vegetation of the snowy zone is regulated by the dryness of the climate, the intensity of light and heat-radiations, and the shortness of the season of growth. Woody forms, gradually dwindling, are absent from the snowy regions. The dryness induces a weakly development of the branches, which are often numerous but short. Almost all the species are perennial; capable of passing one year or more without forming seed or even flowers.

Plants are protected in various ways from excessive transpiration and from drought, which might injure them in the peculiar circumstances under which they live; various arrangements enable them to manage with economy the small amount of water that they can obtain during the growing season. Cold alone seems not sufficient to destroy vegetation, even in Eastern Siberia, where temperatures have been recorded still lower than those of the high mountains. The flora of high elevations is, indeed, far richer than at first sight appears to be the case.

Like causes produce like effects, and the climate common to the high altitudes of the entire world results in the production of similar vegetable-forms, although these may belong to widely differing natural orders. Alpine species have not all the same origin; the actual flora of each mountainous district is the result of various migrations, the succession of which, and even the details, can be ascertained as regards the chief European mountains, though but little is known of those in other parts of the world.

SUPPLEMENTARY ILLUSTRATION.—Bulbous Irises are distinct enough in their mode of growth to have received a separate generic name Xiphion, but the flowers are so unmistakably those of Iris that it seems a pity to place them in a separate genus, though it is very convenient to consider them as forming a sub-division. There are two groups of these Irises, the one with tall stems, the other like the beautiful I. reticulata with no conspicuous stems. The so-called English Irises are forms of I. xiphoides, the Spanish Irises of I. xiphion. The Spanish Irises flower earlier than the English Irises, which latter require more moisture in the growing season. LYNCH, in his excellent Book of the Iris, tells us that whilst in a dry season the Spanish Iris may do well, the English Iris may fail altogether. Any good garden soil seems to suit them, but a sunny position is essential. Our illustration is taken from a bed in the Royal Gardens, Kew.

THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.—The contents of the 30th volume, this time of small dimensions, include the report of the Fruit Growing Conference last October; table of acreage under fruit cultivation in England, Wales, and Scotland (with map); varieties of fruits recommended by the R.H.S.; fruits certified by the R.H.S. since 1883; and various articles on fruit culture, packing, and crystallisation. The publication will be of great value to those interested in fruit culture who will be glad to have in compact form much that has already appeared in the Press.

LINNEAN SOCIETY.—There will be a meeting on Tuesday, June 21, at 8 p.m., when the following papers will be read:—1, "On the Botany of Southern Rhodesia," by Miss L. S. GIBBS, F.L.S.; 2, "On the Authentic Portraits of Linnæus" (lantern slides), by Mr. W. CARRUTHERS, F.R.S., F.L.S.; 3, "Plantæ novæ Daweanæ in Uganda lectæ," by Dr. OTTO STAPF, F.L.S.; 4, "On the Genitalia of Diptera," by Mr. W. WESCHE.

SMALL HOLDINGS.—From the 5th to the 8th inst., inclusive, separate deputations of the Departmental Committee appointed by the President of the Board of Agriculture and Fisheries to enquire into the subject of small holdings visited certain typical districts, including small holdings near Blairgowrie, Evesham, Bromsgrove, Nordelph and those of the South Lincolnshire and Norfolk Small Holdings Associations. The evidence of Mr. F. IMPEY, of Longbridge, Birmingham, was taken at Worcester. The deputation to Scotland held sittings at Blairgowrie, Perth, and Edinburgh. The witnesses in attendance were Mr. J. M. HODGE and J. STEWART, of Blairgowrie; Mr. J. M. MILLER and Mr. J. NICOLSON, of Caithness-shire; Mr. G. MUIRHEAD, Fochabers, Morayshire; Sir A. J. CAMPBELL-ORDES, Bart., of North Uist and Argyllshire; Mr. J. MEIKLEJOHN, Ross-shire; Mr. J. POLLOCK, Renfrewshire; Mr. G. MAC GREGOR, the Secretary of the Congested Districts Board; Mr. JAS. MACDONALD, Secretary of the Highland and Agricultural Society; and Messrs. G. CONSTABLE (Peebles-shire), and J. DRYSDALE Stirlingshire), of the Scottish Chamber of Agri-(culture.

FLOWERS IN SEASON.—From ROBERT VEITCH & SON, Exeter, we have received flowers of *Rubus Lucretia*, with white flowers resembling those of Rubus deliciosus, and stated to bear excellent fruits ripening quite a fortnight before other Blackberries, and with a distinct and most agreeable flavour. *Calceolaria Veitchii*, an excellent robust form which has proved hardy in the West of England; it is a hybrid from Calceolaria plantaginea, raised at the nurseries of Messrs. ROBERT VEITCH & SON, Exeter. *Buddleia Colvillei*, with beautiful pink flowers in clusters at the end of the branches. Each flower has a superficial resemblance to that of Escallonia macrantha; the leaves are lanceolate, tapering to both ends, wrinkled and downy on the under surface. Messrs. EDWIN HILLIER & SONS, of Winchester, send us fine specimens of Abutilon vitifolium, a shrubby Mallow, with large pale violet flowers. Messrs. HILLIER tell us that the blooms were taken from a shrub about 12 feet high, growing in the open border, and apparently quite hardy. We have figured this plant from Ireland, and have seen it in the Isle of Wight, but it is satisfactory to hear that it is hardy in less favoured climates. Messrs. KELWAY & SON, of Langport, send a selection of their Pyrethrums, single and double, from pure snow-white to the richest carmine. Remembering what Pyrethrums used to be, these are indeed noble flowers. Carl Vogt is a pure white double variety. Cassiope, single, rich carmine, with a yellow disc; Alice, single, rosy lilac; James Kelway, maroon with a yellow disc; but we cannot enumerate more of these or we should have to write a catalogue; suffice it to say they are excellent. From Mr. E. B. GAWNE, Kentraugh Nursery, Isle of Man, we have received flowers of a strain of Calceolarias, some large pips of florists' Cinerarias, and bright trusses of star Cinerarias.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.—The committee have much pleasure in announcing a valuable gift to the society by Messrs. SANDER & SONS, St. Albans, in the form of a silver cup, valued at 25 guineas, which is to be competed for by amateur members of the society during this session. The challenge cup will be won by the exhibitor who gains the largest number of points during the session. In addition to the challenge cup awarded to the winning amateur, a bonus of £5 will be paid to the gardener in charge of the winning collection. W. THOMPSON, Esq., J.P., of Stone, Staffordshire, has kindly offered a similar challenge cup for the 1907-1908 session. The committee have much pleasure in announcing that in future all plants which receive first-class certificates at the society's meetings shall be painted and kept on record. This will mean a considerable outlay, but several gentlemen present at the last committee meeting started a fund for this purpose.

SALE OF THE LATE MR. BURBIDGE'S LIBRARY.—On Saturday, June 9, Messrs. WILKINSON, SOTHEBY & HODGE sold by auction, at their rooms in Wellington Street, Strand, the library of the late Mr. FREDERICK W. BURBIDGE, M.A., curator of the Botanic Gardens at Trinity College, Dublin. The books were put up in 78 lots, the more important of which, with the prices realised and names of purchasers, were as follow:—"Historia Plantarum," by A. Pinæi, numerous woodcuts of plants, Lugduni, 1561, £1 (Brooks); "Rariorum aliquot Stirpium per Pannoniam, Austriam, &c.," by Car. Clusius, Antwerp, 1583, and "Rariorum per Hispanias observatorum Historia," 1576, £1 1s. (Wesley); "Cistineæ, the Natural Order of Cistus or Rock-rose," by Robert Sweet, 1825-30, £3 16s. (Quaritch); "The Horticultural Repository," by G. Brookshaw, 1823, £2 2s. (Thorp); B. Maund's "Botanic Garden," 13 vols., 1825, and "The Botanist," 4 vols., 1839, £4 10s. (Bumpus); "Flora Orientalis, sive Enumeratio Plantarum in Oriente, &c.," by E. Boissier, 6 vols., Basil, 1867-88, £2 12s. (Horridge); "English Botany, or Coloured Figures of British Plants, &c.," by J. Sowerby, with occasional remarks by J. E. Smith, vols. 1-31 and general index, 1790-1814, £14 (Wesley); "Stirpium Illustrationes," by M. de Lobel, 1655, and "A New Herball," by R. Dodoens, translated by H. Dyte, black letter, 1595, £1 5s. (Quaritch); "Thesaurus Literaturæ Botanicæ," by G. A. Pritzel, 1872, and "Pomona Londimensis," by W. Hooker, vol. 1, 1818, £2 13s. (Quaritch); "Hortus Floridus," by C. Passæus, Arnheim, 1614, £5 5s. (Wesley); another copy of the same, on vellum, £10 (Wesley); a later edition of the same, 1616, £5 5s. (Wesley); "Icones Stirpium sen Plantarum," by R. Dodonæus, Antwerp, 1591, £1 2s. (Wesley); W. Turner's "Herbal," black letter, imperfect, 1568, £1 3s. (Thorp); "Plantarum sen Stirpium Historia," by M. de Lobel, Antwerp, 1576, £1 13s. (Brooks); "Flora, seu de Florum Cultura, or a complete Florilege," by J. Rea, 1676, and "Systema Agricultura, the Mystery of Husbandry Discovered," by J. Worlidge, 1687, £1 9s. (Quaritch); "Florilegium," by S. Sweertt, plates coloured by hand, 1612, £1 16s. (Maggs); J. Gerarde's "Herball or Generall Historie of Plantes," first ed., imprinted at London by John Moreton, 1597, £3 12s. (Edwards); "Paradisi in Sole," by J. Parkinson, 1656, £4 5s. (Parsons); ditto, reprint by Methuen, 1904, £1 18s. (Parsons); "Thesaurus Rei Herbariæ Hortensis Universalis, exhibens figuras Florum, Herbarum, &c.," 3 vols., 1750-72, £3 16s. (Thorp); "A Monograph of Odontoglossum," by James Bateman, 30 coloured plates, 1874, £2 10s. (Hill); "Hortus Eystettensis, sive Plantarum Florum, &., by Basil Besler, Nuremberg, 1613, £1 5s. (Brooks); George Brookshaw's "Pomona Britannica," 93 coloured plates, 1812, £4 (Thorp); "Hortus Nitidissimis omnem per annum superbiens floribus, sive amœnissimorum florum imagines in publicum ediderunt Joan. Mich Seligman et Wirsing," 190 coloured plates, atlas folio, Nuremberg, 1768-86, £4 15s. (Wesley); "Plantæ selectæ quarum imagines pinxit G. Dion, Ehret, notis illustravit C. J. Trew," 100 coloured plates, Nuremberg, 1750, £2 6s. (Parsons); F. Sander's "Reichenbachia," 2 vols., and second series, 2 vols. (together 4 vols.), beautifully coloured plates, 1 vol. bound in half morocco, the remainder in the original parts as issued, 1888, atlas folio, £10 5s. (Wheldle).

THE HORTICULTURAL CLUB.—At the meeting on the 12th inst., at which Sir JOHN LLEWELYN presided, Mr. A. E. BROOKE-HUNT spoke on the question of Agricultural and Horticultural education in this country. We shall advert to this subject in another issue.

THE BURBIDGE MEMORIAL LIBRARY.—We learn that the Board of Trinity College, Dublin, has voted a grant of £10 towards this object.

AMERICAN GOOSEBERRY MILDEW.—A useful leaflet on this subject is issued by the Department of Agricultural and Technical Instruction for Ireland. The American mildew (Sphærotheca mors-uvae) has been noticed in Kilkenny on the Red Currant, upon which it first appears as a flour-like deposit. Any plant showing this disease should be uprooted and burnt, or, failing this extreme measure, should be thoroughly sprayed with potassium sulphide (not sulphate) in the proportion of one ounce to two gallons of water, and this treatment should be repeated at intervals of a fortnight. For subsequent sprayings a stronger solution may be used. Growers in doubt as to the presence of this or any other disease are invited to send specimens to the department (Merrion Street, Dublin) for identification.

HORTICULTURAL SOCIETY OF NEW YORK.—We have received the subjoined circular letter:—The Horticultural Society of New York proposes to hold in the early fall of 1907 an International Conference on Hardiness and Acclimatisation, if there is sufficient general interest evinced to warrant organising such a gathering. I am instructed by the president and council to ascertain whether your institution would be inclined to support such a Conference, and whether you would be able to take part in the deliberations. I need hardly remind you that the questions proposed are of supreme importance to horticulturists, and there is very little, if any, codified matter available in this country (U.S.A.). The proceedings of the Conference would form the substance of a volume of memoirs of this society, to be a companion to the proceedings of the International Conference on Plant Breeding, held in 1902. Any assistance that you can give me at this time, suggesting lines for discussion, together with the names of those whom you think might be interested, and whom I could approach, would be greatly appreciated. *Leonard Barron, Secretary.*

SOCIETY FOR HORTICULTURAL SCIENCE.—The next meeting of the Society for Horticultural Science will be held in connection with the coming meeting of the American Association for the advancement of Science, at Cornell University, Ithaca, N.Y. The association meeting begins June 29, and by designation of President BAILEY the society's meetings will be held on the two days preceding, namely, June 27 and 28. Conditions are favourable for a well-attended and enthusiastic meeting. The time is convenient, coming just after the close of the teaching season. The meeting is in connection with that of the American association, yet avoids conflicts with it by coming just before. The place is central, and the distance practicable for a good portion of those interested, and Cornell itself is a centre for scientific horticulturists. Membership is restricted to persons engaged in teaching or investigating scientific horticulture. *V. A. Clark, Secretary-Treasurer.*

——The Society for Horticultural Science is an organisation of teaching and investigating horticulturists and others who are interested in the advancement of horticulture by rational methods. The society itself is a concerted movement to this end. The society occupies the territory between that of the societies for general science and that of the popular horticultural societies and connects them. The society is not for the presentation of practical results as such, which are already abundantly provided for. The sphere of this society is the devising of rules, whereby practice may be made more exact and more intelligent. These rules are the society's finished product, the raw material for which is found in the finished results of the societies for general science. The Society for Horticultural Science begins where the societies for general science leave off, and leaves off where the practical societies begin. No other organisation covers the territory of this society, nor does any other supply the want which gave rise to it. As to the society's methods of work: The society brings together the scattered facts of horticultural science, analyses them and points out their relation to each other. The society is concerned with the relations of the facts to each other and with their interpretation rather than with isolated, raw facts themselves. The society is interested in analytical investigation rather than in uncritical mass-experimentation. It is interested in processes, in intermediate stages, in connecting links, in knowing how to get a result rather than in the result itself. It is more interested in the steps of a demonstration and in their indubitable sequence than in the conclusion. It is more interested in the method, the theory, the logic, the mechanism of an investigation than in its outcome or mere practical results. This is not because the society values practical results less highly than does the practitioner, but because it appreciates more highly the method that must be followed to get these results and to make them certain in application. It is because the world is clamouring for results and because the society wishes to show how the demand may be supplied the most expeditiously possible consistent with reliability. It is because cross-lot, cut-the-corner methods of experimentation for quick results have overwhelmingly demonstrated their incompetence and unreliability. It is because the society places reason above empiricism, the dignity of the human mind above rule-of-thumb. Further, as to the society's work. It re-states in terms of natural science the problems of horticultural industry or of sense-perception. It objectifies [*sic*] knowledge, rendering possible the establishment of standards of judgment, the making of measurements, and hence the development of science. The society substitutes for the highest certainty that can be furnished by unreasoned experience, which is only certitude, and for its dogmatism the demonstrable certainty of science and its reasonableness. The society is not unappreciative of how large a part practised instinct or acquired tact—sense-conduct—plays in practice. Rather, it bends all its efforts to establishing standards and to making rules whereby sense-practice can more intelligently regulate itself. The society is not concerned with practising, but with laying the foundations of practice. It does not aim to be a practitioner, but a practitioner's guide. The society then is systematising, critical and rationalising. It reduces horticulture to pedagogic form. And this is the great and crying need of present-day horticulture. The Society for Horticultural Science stands for scholarship in horticulture. *V. A Clark, Secretary, Phœnix, Arizona.*

Carnations.—Messrs. Cutbush & Sons were the recipients of a Gold Medal, with congratulations of the jury, at the recent Horticultural Exhibition in Paris. The *Jardin*, of June 5, gives an illustration of the group which secured this honour. The same firm also secured awards for Roses.

Country Press Post-cards.—The Country Press Pictorial Descriptive Post-cards have, at any rate, a long title. We have previously commented upon sets of these cards and now note the appearance of others, also issued from the "Country Press," 19, Ball Street, Kensington. The more recent pictures represent "Natural Figures of Boles" of British trees, and show the Horse and Sweet Chestnuts, the Oak, Walnut, Beech, and Maple. Each is accompanied by a brief description extracted from *Sylvan Winter*, by Mr. Francis Heath, and as the information is correct and the pictures are pretty, we hope nature-students will benefit by them.

Zoology.—The arrival of the Prince of Wales' zoological collection, on June 7, at Tilbury, emphasises the far greater interest taken in living animals than in living plants by the "world," although his "wife" divides her average attention fairly impartially. We do not hear of the Prince of Wales' Botanical collection or Herbarium, nor of any single gift to Kew, Wisley, or the Regent's Park Botanic Garden.

Manuring.—Mr. Edward Owen Greening has added a pamphlet on this important subject to his penny series of "One & All" gardening books. The letterpress details recent experiments and improvements made in the science and practice of manuring, and this in plain language suitable for the use of amateurs. There are plenty of instructive illustrations. The pamphlet is published by the London Agricultural and Horticultural Association, 92, Long Acre, W.C.

Mr. Henry Stevens' Photographs.—Most of our readers know something of Mr. Henry Stevens, the auctioneer, of King Street, Covent Garden, for many of the most important sales of Orchids and other plants are conducted in his rooms. But Mr. Stevens is also an expert photographer, and some of his works have been reproduced in our own pages. A small exhibition of Mr. Stevens' photographs of animals, domestic pets, and horticultural subjects was opened at the office of the *British Journal of Photography*, 24, Wellington Street, London, W.C., on June 8, and will remain open for free inspection by the public until July 21. The exhibition contains 42 subjects, including six transparencies. The best of the horticultural subjects is the representation of a bowl of Gloire de Dijon Roses, which was reproduced as a supplement to the *Gardeners' Chronicle* for February 10, 1883. For this photograph Mr. Stevens was in that year awarded a medal by the Photographic Society of Great Britain. Another most pathetic subject, "Worn Out," won a twenty guinea prize offered by the *Graphic*, represents an old woman in a cart driving a donkey. The woman, donkey and cart (the wheels of which are tied again and again with string) are all in the last stage of unfitness. It is an excellent photograph. Some of the photographs of animals are amusing, for in one basket are seated a dog, cat, and three rabbits, all of which appear to be happy.

Potato Incubators.—*Feathered Life* is responsible for the following:—"There is to be seen at the farm homestead of Mr. J. Hudspeth, Kenton Lodge, Newcastle, a turkey cock sitting on ducks' eggs. He was first discovered to be sitting on Potatos, which were replaced by Mrs. Hudspeth with eggs." It would be interesting to know the culinary condition of the "incubated" Potatos.

The Preservation of Footpaths.—We have received the latest report of the Kent and Surrey Committee of the Commons and Footpaths Preservation Society. During the past 18 months the work of the society has much increased, and the results obtained are correspondingly gratifying. With the increase of building, nowadays, the securing and maintaining of open spaces and footpaths becomes more and more necessary, and efforts should be made not merely to secure new ground but to preserve all common land and all rights of way that are in danger of being usurped for private purposes. The committee appeals for funds from those interested in its objects, which affect all residents in the localities under discussion. The report contains illustrations of some of the districts to which attention has lately been paid by the society.

Liberia.—It is perhaps the botany of this country that is of the highest interest, both scientifically and commercially, and this is dealt with in Sir Harry Johnston's "Liberia" by Dr. Otto Stapf, of the Royal Gardens, Kew, who has contributed an important appendix on the flora of Liberia, which is based chiefly on collections made by recent British explorers, and which is illustrated by the drawings of Miss Matilda Smith. The book is published by Messrs. Hutchinson & Co.

The Floral Clock.—The idea of arranging beds of flowers according to the time of day at which they open is no new one. It is a pleasant fancy still with some gardeners to establish such dials, and we note, in the June number of *The Strand Magazine*, two plans for such horoscopes. The writer mentions some of the flowers that may be depended upon to open more or less exactly to time, and by experimenting with these and other plants the growers would at least enlarge their knowledge of the habits of certain species. Linnæus' floral clock is, of course, cited as an instance of this plan of learning or divining the time. A good watch, however, is more trustworthy.

Red Clover.—Mr. Arthur Leighton, of Newcastle, Staffs., has issued a pamphlet upon Red Clover and its Transitional Forms, which the importance of the plant to agriculturists is in itself sufficient to render interesting. The author mentions that Red Clover was introduced from Flanders in 1633, and has since been extensively grown, though no exact records of its early habits are extant. The plant is considered by some as an annual, that is, it dies every winter; some authorities ascribing its failure to survive as being due to the attacks of a fungus. Mr. Leighton considers that the annual loss of the plant is brought about by the system of cultivation, by which its perennial nature has been lost, but that this permanent character will re-appear under other conditions of cultivation. This "atavism" makes the principle of inheritance an interesting study, and one important to growers. When once a species is established as an annual its reproduction (from seed) will result in a race with fixed characteristics, whereas the increase from buds or tubers is admittedly uncertain and variable. "The dying out of the Clover in the winter months, from which farmers have suffered for some years, may be attributed to an annual tendency rather than to any fungus or insect attack." There are, from an agricultural standpoint, four varieties of Red Clover—namely, the Perennial Red of the meadows, whose seed is not in commerce; single cut Cowgrass, generally accepted as the product of a more permanent plant; Giant Hybrid Cowgrass and ordinary broad-leaved Red Clover from seed saved during the first years. These four forms have one common origin, and have altered constitutionally rather than botanically. Plants transitional in character can be obtained from seed, but soon revert to the original types and become annuals, dying at the end of the year. Therefore, always considering the value of this crop, Mr. Leighton, thinking its weakness to be caused by its early maturity and consequent exhaustion, would plant Red Clover late and retard its growth rather than encourage it by giving rich soil and stimulants, arguing that the more a plant is forced the quicker it becomes exhausted, and that this is especially characteristic of plants that are allowed to flower and bear seed and thus fulfil the object of their existence. Finally, we must not forget to mention that the booklet contains several pictures representing experimental fields of Clover under various treatments. The term "spermideus," as applied to plants, is not familiar, and "spermaphyte" (more correctly "spermatophyte") would be more intelligible to farmers if seed-bearing plants were substituted for the Greek words.

The Hybridisation Conference.—The following invitation has been issued by Mr. Bateson:—"It is thought that members of the Hybridisation and Plant-Breeding Conference interested in the scientific aspects of these subjects may be glad of an opportunity of visiting Cambridge, and making acquaintance with the experimental work in progress there. Arrangements will accordingly be made for a visit to Cambridge immediately after the close of the London meeting, which concludes with the visit to Kew Gardens on Friday, August 3. Those who desire to do so can leave London (Great Eastern Railway from Liverpool Street Station) at 8.20 p.m., reaching Cambridge at 9.40. They will pass the night either in some of the Colleges or at the houses of those who are good enough to act as hosts, see the various experiments on Saturday, and spend that night also in Cambridge, when it is hoped that some evening gathering may be arranged for in one of the Colleges. Those who propose to attend the meeting of the British Association in York can leave on Sunday at 11.13 a.m., reaching York at 4.35 p.m. As Saturday is a blank day at the British Association, there would be little gain in reaching York before Sunday afternoon. The one day in Cambridge will not suffice for a visit to the Colleges and other objects of interest in the University, but those who do not intend to go to York are cordially invited to prolong their stay in Cambridge. I shall be glad to know whether you will be able to accept this invitation, and whether you will be accompanied by a lady, for in that case special arrangements have to be made, College accommodation being only available for men. W. BATESON."

MATERIALS FOR THATCHING.—M. E. DE WILDEMAN has issued Part II. of *Tuiles Végétales* in pamphlet form, the subject-matter having been previously published by him in *Missions Belges de la Compagnie de Jésus*. The author deals with the various vegetable fibres and foliage used by the natives of the Congo for thatching, and his illustrations show how some of these are employed. Among the species mentioned as being found suitable are Garcophrynium Arnoldianum, Raphia Laurentii, R. Sese, R. Gentiliana, and R. Gilletii, and others, whose fibres are plentiful and strong, or whose enormous fronds can be dried and utilised for thatch.

CLIMATE AND VEGETATION FOR 1905.—From Mr. MAWLEY's valuable report to the Royal Meteorological Society we take the following summary:—As affecting vegetation, the weather of the phenological year ending November, 1905, was chiefly remarkable for the dryness and mildness of the winter months, the drought and frosts in May, the long spell of hot and dry weather in July, and an exceptionally cold period in October. Wild plants came into flower a few days earlier than usual until about the beginning of May, after which time they were, as a rule, to about the same extent late. Most of the early spring migrants, such as the swallow, nightingale, etc., reached these shores rather in advance of their average dates. The best farm crops of the year were those of Wheat, Beans, and Hops; while Barley, Potatos, Turnips, and Mangolds were all more or less over average. On the other hand, the yield of Oats, Peas, and Hay was almost everywhere deficient—the latter being the worst crop of the year. Apples, Pears, and Plums were in all parts of the British Isles below average, whereas the small fruits, as a rule, yielded moderately well. Taking the farm crops alone, the past year must be regarded as having been, on the whole, a fairly bountiful one.

THE CALAMITY AT SAN FRANCISCO.—The number of *Gardening* for May 13 has two notes by the same writer—the one buoyant and detailing floral triumphs at the Opera and elsewhere, the other of a very different complexion. "The foregoing was written Tuesday night, April 17, and pocketed with the idea of adding some trade notes a day or two later before posting. The next morning a few minutes after 5 o'clock I was awakened by the sensation of a whirling about of my room and whirling back again, twice repeated, and the promiscuous scattering and loud clattering of its considerable contents. An 18 inch by 3 foot glass framed picture on the wall above my pillow came down and wounded me in several places, but only superficially, my worst cut being in the right hand, its bandaged condition preventing me from concluding this report and getting it off in time for the *American Florist's* last edition. And I would have also sent last week the completed report I had carefully prepared for the *American Florist Company's Directory*. It was consumed with all else I had in this world, in the fire that followed the earthquake. The trade notes I had gathered for this letter would not do for publication now; they all related to florists of the north and south divisions of the city, fully two-thirds of the city, all now a mass of ruins, and the florists are scattered among the army tents that cover the green hills of the western division toward the Presidio and Golden Gate and the elevations of San Mateo county that overlook the burned city. The growers and nurserymen were beyond the fire limits, and with the exception of more or less broken glass and pots are comparatively uninjured. The JOHN H. SIEVERS Co. escaped the fire by only one block." *Jesse White.* —— A remarkable escape from injury was that of LUTHER BURBANK. His home and experimental gardens were undisturbed. Mr. BURBANK saved his valuable collection of photographic negatives. These were unbroken, though the other half of the gallery in which they were stored was smashed to splinters.

THE FAMILIES OF FLOWERING PLANTS.—In the present neglect of systematic teaching in regard to the classification of plants, the "Guide to the Principal Families of Flowering Plants," by Mr. J. ADAMS, will be found serviceable. It is arranged according to the system of ENGLER. It is, after all, a knowledge of the natural groups themselves that is most to be desired. The limitations of the groups do not vary materially in any of the modern systems of classification, although the sequence and arrangement differ according to increase of knowledge and personal opinion. The close collocation, for physiological reasons only, of Sarracenias, Nepenthes, Cephalotus, and Droseras, for instance, because they all have pitchers or insect-catching leaves, though otherwise widely different, is about as reasonable as it would be to place Monmouth and Macedon in the same category. The near approximation of Thymelaceæ and Magnoliaceæ is almost equally bizarre. But these details do not interfere with the utility of the pamphlet. It may be had from SEALY, BRYERS & WALKER, of Dublin.

Publications Received.—*The Agricultural Gazette of New South Wales.* April. Contents: Wheat at the Coura Experiment-Station Farm, W. Farrer and G. L. Sutton; New South Wales Forestry, J. H. Maiden; Practical Vegetable and Flower Growing, W. S. Campbell, &c.—*Annual Report of the Director of Agriculture, Transvaal.* A bulky volume of reports from various Divisions. Mr. J. Burtt Davy says that the Botanical Department has been mainly occupied with seed and plant introduction and testing, seed distribution, stock-range investigations and experiments, investigations of poisonous plants, noxious, fibre and native economic plants. Many successful experiments were made. Mr. C. E. Legat gives an encouraging report of the Division of Forestry, and Mr. R. A. Davis a similar note on the Division of Horticulture.—*Proceedings of the Academy of Natural Sciences of Philadelphia.* September to December, 1905. Contents: Cratægus in Eastern Pennsylvania, C. S. Sargent; Plant Formations of the Bermuda Islands, Dr. J. W. Harshberger; Hour-glass Stems of the Bermuda Palmetto, by the same author. These are the principal botanical articles. The volume includes satisfactory reports from various officials of the Academy concerning their several departments.—Jamaica: *Bulletin of the Department of Agriculture.* April. Edited by Wm. Fawcett. Contents: Cassada Trials, Cotton Disease, Logwood, Early Oranges, History of the Double Cocoanut, &c.—*Agricultural Gazette: Report of the Vegetable Growers' Association of Ontario.* 1905. A useful association whose works will be still more important as the number of members increases.—*Report of the Bee-Keepers' Association of Ontario.* 1905. Among other interesting items we note that the spraying of fruit-trees when in bloom is illegal, and that owing to spraying at that time enormous numbers of bees have been destroyed.—*Report of the Poultry Institute of Ontario.* 1905. *Report on Cocoa and Cola Industries in the Gold Coast.* By W. H. Johnson. This has been forwarded to us by Mr. A. E. Evans, Botanic Gardens, Aburi, and promises a successful future for the Cocoa industry in the Gold Coast regions.—From the Jamaica Board of Agriculture: *Report on the Sugar Experiment Station*, for 1905. By H. H. Cousins. This report deals not only with Sugar-cane cultivation, but with the questions of distillation and the manufacture of rum.—The Board of Agriculture and Fisheries issue the following leaflets: No. 144, *Heart-rot of Beet, Mangold and Swede;* No. 160, *Cultivation of Lucerne;* No. 163, *Grafting Fruit Trees;* No. 163, *White Rust of Cabbages;* No. 164, *Potato Leaf-curl.*—Manning's Monographs, No. 2: *Hardy Rhododendrons, Azaleas, and the Mountain Laurel.* The Reading Nurseries, Massachusetts. A useful list of the best varieties of these plants and giving cultural hints.—From the United States Department of Agriculture: *The Home Vegetable Garden*, by W. R. Beattie. *Apple Districts of New York, with varieties for each.* U. P. Hedrick, N. O. Booth, and O. M. Taylor.—*Varieties of Strawberries and Cultural Directions*, O. M. Taylor.

WATER GARDENS.

(Continued from page 360.)

MISCELLANEOUS AQUATIC PLANTS.

The rank and file of aquatics need a vigorous selection. A few indiscreet inclusions may spoil everything, and I am disposed to condemn many on account of their naturally weedy character and their too rapid increase. One desires for the water garden plants that will flourish for many years, and which will contribute, when once established, to a scene of artistic refinement that should be the dominant feature in all water gardens. I would not advise planting Nuphars in any lake where Nymphæas are grown; no water would be visible after they had occupied the lake for ten years, and no Water Lily could endure such truculent neighbours. Phragmitis communis, too, should be debarred, as well as Alisma plantago, Stratiotes aloides, Ranunculus aquatilis, R. lingua, and Villarsia nymphæoides. Typhas, such as minima, stenophylla, and angustifolia, I would admit. One would not care to lose their elegant foliage rising from the water, and their pretty brown clubs that form so distinct a feature in autumn time, but I would submit all Typhas to an annual reduction to keep them in bounds. The Reed-mace, Typha latifolia, soon spreads from a square foot of space to a square pole, but the plant is worthy of growing, and it can be annually reduced. Zizania latifolia, the perennial Rice, is an elegant grass with panicles of purplish flowers. It is suitable for growing in shallow water, but the number of seedlings should be reduced annually. Ranunculus lingua grandiflora, a beautiful variety of a weedy plant, is worthy of the best position in shallow waters. Its bold foliage, tall habit, and large glistening yellow flowers, like those of a small Trollius, make it a splendid subject. Caltha polypetala, a great rarity from Asia, has leaves thrice as large as those of the Coltsfoot, although similarly shaped, and of a lustrous green, and with decumbent peduncles, 2 feet long, that bear elegant "globes" of golden yellow, each as large as a Walnut. It prefers to be "puddled" in 2 or 3 inches of water. It represents the best yellow flowered sub-aquatic known.

I would suppress Sagittaria sagittifolia as being too aggressive, but I would include S. montevidensis for its lance-shaped leaves and its striking panicles of large white, brown spotted flowers; another worthy Arrowhead is S. variabilis, for it has fine leaves and an inflorescence of pure white gold-tasselled flowers. The double flowered form of S. variabilis develops bold panicles of double white flowers that stand 2 feet above the water's surface. They resemble enlarged Stocks.

REEDS AND RUSHES.

These subjects are not difficult to reduce should they get out of hand, hence one may with safety plant them freely. The variegated Porcupine Rush, Scirpus lacustris, zebrinus, whose beauty lies in the leaves that are adorned with transverse bands of white, should form a large clump. The less beautiful corkscrew Rush, Juncus spiralis, and the variegated Rush, Juncus effusus aureo-striatus, the last named with a not very conspicuous line of yellow traversing its length of leaf, may be admitted for their individual interest rather than for their beauty. Carex Gaudichaudiana, the Japanese Sedge and C. pendula, together with Cyperus longus, are suitable plants sufficiently ornamental to be welcomed, and whose increase, though rapid, is capable of being curtailed and kept within reasonable limits. All these plants need shallow water, with plenty of mud in which to root.

Acorus calamus, the Sweet Flag, needs a position sheltered from winds. Its leaves often exceed 6 feet in height, and are very ornamental. The variegated Japanese Sweet Flag (Acorus japonicus is too garish a plant for our purpose; similarly the variegated form of the common Manna grass (Glyceria aquatica) may with greater fitness be grown with it in the garden pool, where its variegation could be more readily appreciated. The Water Hawthorn (Aponogeton distachyon) cannot be overlooked. Its lance-shaped floating leaves and dainty, sweetly scented, ivory-white and curiously fashioned flowers, "peppered" on the inside with tiny stamens, are always welcome. Moreover, the plant does not increase inordinately. Hottonia palustris, the "Water Violet," should find no place in our scheme. Although wonderfully pretty, this submerged plant needs a more restricted sphere than a large lake affords. The Buck Bean (Menyanthes trifoliata) may be introduced into shallow water. The tubers should be fastened to the bank, and the subsequent spread of growth allowed a limited range, from which it must not escape. Its pink, feathery flowers are very pleasing. The Golden Club (Orontium aquaticum) forms a distinct-looking mass of round leaves of a lustrous green shade, and has curious Arum-like, apetalous flowers. It makes an interesting floating plant and does not become a nuisance.

Pontederias revel in shallows, and such fine species as P. cordata, whose inflorescence is none too well coloured, but whose leaves form a bold-looking clump, and P. montevidensis, a newer species, with narrowly cordate leafage 2 feet high and more, and with showy flowers of a good shade of blue, are deserving of selection. Admit no Azollas of any kind—fortunately they are not quite hardy—or by this time the Canadian water weed (Elodea canadensis) and the common pond weed would have doughty rivals in the Azollas as water pests. They are, however, able to thrive and increase in the south-west, as many growers too well know. The "Frog Bit" (Hydrocharis morsus ranae) may be afforded a little recess to itself, but a watchful eye is needed over its peregrinations. *G. B. Mallett.*

(*To be continued.*)

HYBRID CALCEOLARIAS.

DURING the spring months one of the most showy features of the cool greenhouse and conservatory in the Royal Gardens, Kew, are the beautiful varieties of herbaceous Calceolarias.

By intercrossing the greenhouse herbaceous varieties with C. rugosa, Mr. John Jefferies, of Oxford, has broken down the barrier between them.

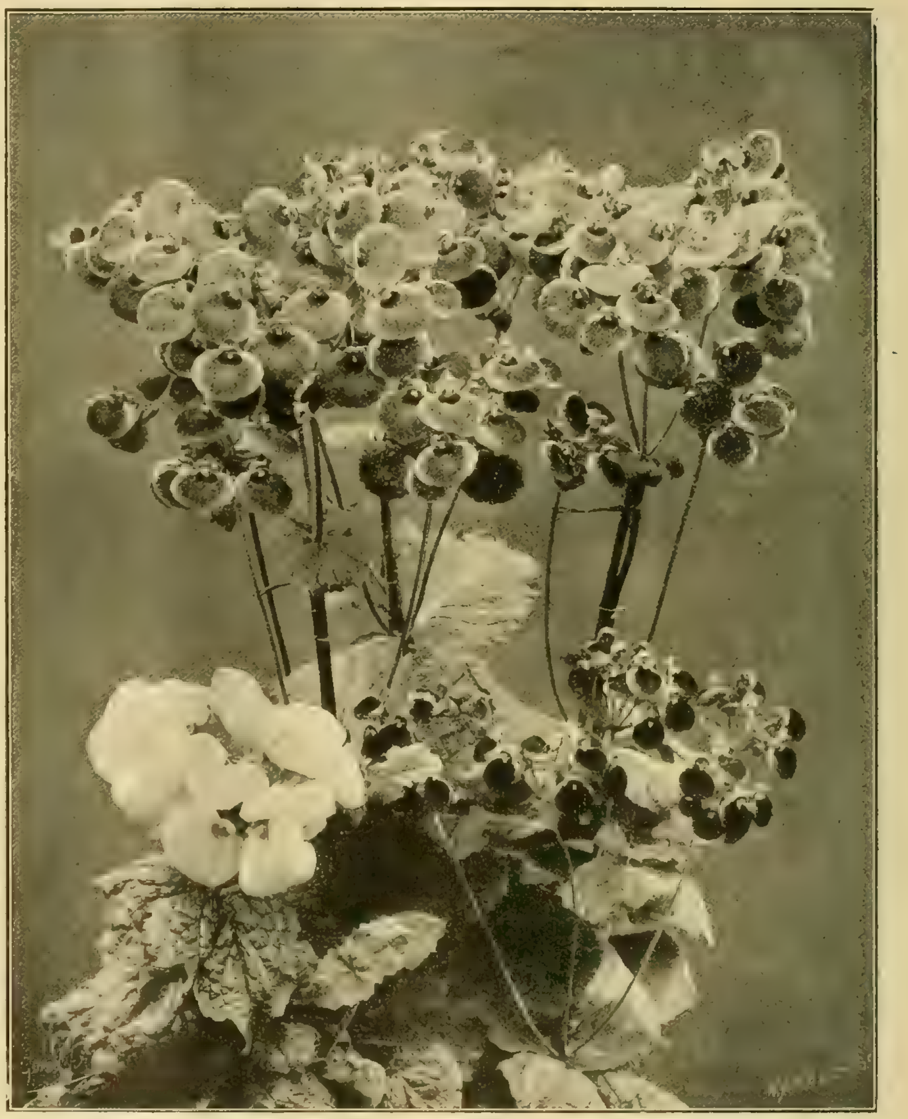
So far Jefferies' hybrid Calceolarias have not been received very favourably. Those who have grown and know the true value of the plants, however, more especially as the forerunner of a new race, confidently expect to use the words of an old saying, "There'll come a time some day."

The largest plants of this type at present flowering are a year and nine months old from cuttings. After flowering last year the old flowering shoots were cut off and the plants potted on. During the winter they have been grown in a house with a minimum atmospheric temperature at night of 40° Fahr. The points of the shoots were pinched off several times. Plants raised from cuttings inserted on several dates in late summer and autumn are just commencing to flower, the size of the plants varying according to the time at which they were rooted. These will give a succession of flowers which will last nearly over the summer. The colours at present are not very numerous, but this can soon be remedied. A rich crimson self colour is very striking, another with a golden edging to the brownish-crimson centre finds many admirers.

As previously stated, the height of the plants can be varied according to the grower's requirements; say from 2 feet to 6 feet. The branching panicles are covered with flowers about an inch across. The leaves are not quite so large as in the herbaceous varieties, but are more erect.

Last year a bed was planted with this type in the open air. It was a great success and flowered continuously the whole summer.

At present the plant is a shy seeder. The pollen has been used on some of the best forms of the herbaceous varieties with the idea of obtaining a greater range of colour. The result of this second cross is very encouraging; it flowered for the first time last spring, and has been given the name of C. Kewensis ×.



[*Photo by E. J. Wallis.*

FIG. 158.—CALCEOLARIA KEWENSIS ×, AND ITS TWO PARENTS.

CALCEOLARIA KEWENSIS ×.

The plants are more compact and the flowers about double the size of C. Jefferies' Hybrid, and the colours of the flowers are more numerous. The large plants at present flowering average 2 feet 6 inches in height, and are 2 feet in diameter. The old panicles of flower were removed when fading last year, and the plants potted on. They are now about 21 months old from seeds. Plenty of seeds were obtained from these plants last year. On a side stage some of the seedlings are flowering, being from 1 to 2 feet in height. The illustration at fig. 158 shows one of these plants with yellow flowers, also an herbaceous variety on the left side, and one of Jefferies' Hybrid Calceolarias on the other side, on the right, for comparison. *A. O.*

NEW INVENTIONS.

A USEFUL PUMP.

A GOOD pump is, in many gardens, an almost indispensable implement, and in fruit orchards where spraying operations are conducted, an absolute necessity. Anker's patent pedal pump, fig. 159, differs from the majority of spraying and pumping machines in that the necessary force is applied by the operator's feet—as in working the pedals of a bicycle—and the pressure thus obtained by the weight of the body enables a large volume of water to be thrown a considerable distance. The machine is constructed in the form of a barrow, and is thus so readily removed from one place to another, that a boy can convey it with ease. When at rest the machine stands upon its own frame, and the operator mounts upon the foot plates, steadying himself by an upright bar with a handle, and commences the pedalling. Fig. 159 shows the machine at work. The feed pipe is shown at the back, and this is placed in the tank or stream from which the water is to be drawn. Thus the whole force is supplied by the pump itself, and, considering the small size of the machine, the power is remarkable. It is suitable for use in the garden, also for extinguishing fires, for whitewashing, emptying gullies, draining ponds and other purposes. The patentee is Mr. Richard Anker, 57, Carter Lane, London, E.C.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

THE PROTECTION OF FRUIT AND OTHER CROPS FROM FROST IN SPRING.—I was much interested in Mr. Owen Thomas' note on this matter on p. 186. The subject demands a most searching investigation, so that I am surprised that the opinions of so few of our leading fruit growers and gardeners have been expressed on it. It is, however, encouraging to find that the Government has appointed a committee of experts to report on the fruit industry of this country, and it is to be hoped they will pay particular attention to this part of the fruit grower's trouble. Occasionally we are favoured with a good fruit season, but the majority of recent springs have been visited by frosts in May, with what disastrous results some of us growers know only too well. What can be done to minimise the evil? With vegetable crops it is an easy matter to scatter litter or straw over them in the evening when a frost is imminent, and I have saved many of these crops in this way. But with fruit trees something more needs to be done. Wall trees can be protected by canvas blinds let down at night time and drawn up in the morning; or by fish netting hung over the trees. But it is in dealing with the acres of fruit trees, large Strawberry plantations, etc., that the great difficulty lies. Mr. Thomas gives the method advocated and practised by Mr. Martin, of the Toddington Orchard Co., which is that of burning a certain number of lamps to the acre; but I don't think this would find much favour with the majority of growers, especially on a windy night. I remember when, as a young man serving under the late Mr. Ingram at Belvoir Castle, we, in the bothy, used to smile (in our ignorance, as I now believe) at the methods practised by him if he foresaw a sharp frost in the springtime. Wood and rubbish were readily available in such a large garden; and when frost threatened he would ascertain the direction from whence the cold current was proceeding and light these rubbish fires, so that the smoke would travel over that part of the garden where frost would do most harm. I do not remember hearing of disastrous results to the fruit crops in those gardens during my time there. To emphasise the good which these fires undoubtedly do, I may instance a garden where frosts from the north or north-east never do harm; but when it comes from the south much damage is experienced. The gardener attributes this immunity in the former case to the fact that on the north side of the garden, not very far away, is a large manufacturing town, and the heat and smoke issuing from numerous chimneys night and day raise the temperature, and no harm results to the trees from frosts coming from that quarter. The gardener has noticed this peculiarity for the greater part of 30 years. I instance this to support my contention that if the blossoms are to be protected from May frosts, the only practical way to fight the enemy is by doing something that will raise the temperature over a certain spot for a few hours. Lamps, no doubt, are very good, but they must be very troublesome on windy nights, and they take some time to get in readiness, to say nothing of the expense incurred. Rubbish fires will answer the same purpose, they cost nothing —the rubbish must be got rid of—and the resulting ashes form a valuable manure. When fruit trees gave promise of splendid crops of fruit, it behoved everyone connected with the fruit industry to keep a sharp look-out for the foe, and when it comes, to use the best means at disposal to protect the trees. It would be interesting and instructive if growers who have been successful in warding off the evils of spring frosts would give particulars of the ways and the means by which they have been enabled to do so. *S. Wm. Pettit.*

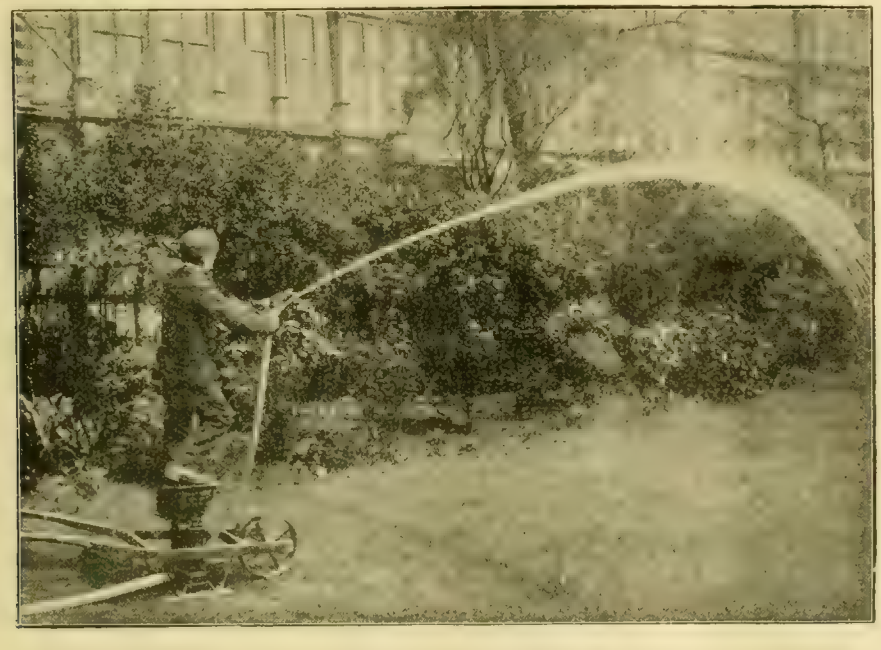


FIG. 159.—ANKER'S PEDAL PUMP.
(For text see page 390.)

STRAWBERRY BEDFORD CHAMPION.—Among the very fine Strawberries raised and introduced by Messrs. Laxton Bros., Bedford, the above variety is certainly one of the best. I have tested it somewhat largely here during the past two seasons, both for forcing and cultivation in the open air, and it has proved itself in every way most satisfactory; it bears forcing well, does not appear subject to mildew, and its richly coloured, large, good flavoured fruits should ensure for it a lasting reputation, and as a market variety it should find much favour. For open-air culture it is a most valuable variety, and on our strong land it is a vigorous grower. No one who visited the Temple Show could have failed to be struck with that splendid exhibit staged by Messrs. Laxton themselves. *Edwin Beckett, Aldenham House Gardens, Elstree.*

THE FRUIT PROSPECTS.—This will be the worst fruit year in this district that has been experienced for a long time (12 years or longer). In the open there are no dessert fruits of any kind worth gathering with the exception of late Apples and Strawberries, and these are both below the average. Of Marie Louise and Doyenné du Comice Pears there are none, but Chaumontel bears a crop. Common Pears (Hazels) carry crops in some places. Late Apples will be plentiful, Cox's Orange Pippin bears a crop, and Lane's Prince Albert a fine crop. Stone fruit on walls have partly escaped, but are still below the average. Morellos carry a crop. Orchard fruits: Apricots, 0; Peaches and Nectarines, 0; Dessert Pears, 15; Dessert Plums and Gages, 0; Dessert Apples (early), 10; Dessert Apples (late), 80; Dessert Cherries, 10; Stewing Pears, 5; Cooking Plums, 15; Damsons, 0; Cooking Apples (early), 40; Cooking Apples (late), 110; Fancy Apples, 100. On south, east, and west walls: Apricots, 70; Peaches and Nectarines, 70; Dessert Pears, 5; Dessert Plums, 15; Figs, 50. On north walls: Dessert Pears, 0; Dessert Plums, 5; Morellos, 100; Dessert Cherries, 5. Soft fruits: Strawberries, 60; Red and White Currants, 10; Black Currants, 45. All these figures are based upon the assumption that "a crop" may be represented by the number 100. The average return in this climate falls short of a crop by about 30 per cent. The Quince trees are late, and it is impossible to estimate the crop. *A. Worsley, Isleworth, Middlesex.*

WORMS IN FLOWER-POTS.—A simple method of freeing the soil in pots standing in rooms, &c., is to place a rotten Apple on the surface of the soil near the plant, and in a short space of time the worms will be observed on the fruit, and can then be brushed off and the Apple laid again on the soil. All the worms in the soil can be caught in this way. *F.*

CHIVES.—To have this useful plant in perfection, the soil should be adhesive, moist, and heavy. In sandy soils the plant gradually dies out, and a sunny or half-shady position suits it best. The plant makes a pretty object with its lilac-coloured flowers on the rockery, where, naturally, the leaves should not be cut. *M.*

CARNATION PRINCESS OF WALES.—This charming pink form of Souvenir de la Malmaison Carnation is a great favourite in the Right Hon. Lord Rothschild's Gardens, Tring Park (gr. Mr. Arthur Dye), sharing with the old blush form the duty of supplying the main crop of flowers. The house of it at Tring Park has never been so good as this year, the plants having presented an appearance for some time past of a mass of bloom. The plants on an average have nine large blooms each and are perfect both in foliage and flower. Several houses are filled with these beautiful "Malmaison" Carnations, which are throughout equal to those in the fine group at the Temple Show for which Lord Rothschild was awarded the Silver-Gilt Flora Medal of the Royal Horticultural Society. *B.*

CLOUDS OF GNATS.—While travelling along a country road at dusk one evening early in June, my attention was directed to what seemed to be columns of thin black smoke rising from many of the trees which had all the appearance of having a smouldering fire among their topmost branches. Oak trees were for the most part thus affected, the Willows, Elms, and Ash trees being clear. These clouds, on closer inspection, turned out not to be masses of vapour but hordes of black gnats, and there must have been millions of them within the space of only a few yards. Had they been bees, it might have been supposed that they were on the point of swarming. Is it a customary occurrence, first, to see such enormous quantities of these insects, and second, is there any particular reason for the selection of the crowns of Oak trees as the scene of their evening revels? *Cyclist.*

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 12.—The ordinary fortnightly meeting of the Committees took place on the above date in the Royal Horticultural Hall, Vincent Square, Westminster, when a very attractive exhibition was made.

Orchids were very numerous, Cattleya Mendeli, C. Mossiæ, and Laelio-Cattleyas being conspicuous. Awards made by the Orchid Committee included two First Class Certificates, seven Awards of Merit, and three Botanical Certificates.

The FLORAL COMMITTEE recommended Awards of Merit to two varieties of Papaver orientale, two varieties of hardy Rhododendron, also to Gloriosa Rothschildiana citrina, and Verbena hybrida variety "Snowflake."

The FRUIT & VEGETABLE COMMITTEE had very little to inspect, and their only award was made to a variety of Cucumber.

At the afternoon meeting 118 new Fellows were elected, and Sir George Watt read a valuable paper on "Tea and the Tea Plant."

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Jno. Green, T. W. Turner, G. Reuthe, Chas. Dixon, R. W. Wallace, A. Perry, W. Howe, H. J. Cutbush, Chas. Jeffries, J. T. Bennett-Poë, Chas. E. Shea, F. Page Roberts, (Rev.) Chas. E. Pearson, W. P. Thomson, M. J. James, Geo. Paul, C. T. Druery, Geo. Nicholson, H. B. May, Jno. Jennings, James Hudson, and R. C. Notcutt.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, filled one of the side tables with batches of Ixoras intermingled with choice Ferns. The Ixoras attracted much notice, the plants being dwarf and bearing large trusses of their pleasing flowers. The varieties Fraseri (orange red) and Williamsi (orange salmon) are deserving of especial mention. (Silver Flora Medal.)

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed a collection of ornamental stove and greenhouse plants similar to the group exhibited by him at the Temple Flower Show; also flowers of double and single varieties of Pyrethrum roseum, and varieties of Iris, etc. (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed their new Primulas Cockburniana, deflexa, Veitchii, sibirica and pulverulenta, also the handsome Meconopsis integrifolia, with M. punicea at the back of the group. In another part of the hall Messrs. VEITCH displayed a number of greenhouse flowering plants, including beautiful Streptocarpus hybrids, Gloxinias, Kalanchoe flammula, and a number of handsome Gerberas. (Silver Flora Medal.)

Quite the best plants of herbaceous Calceolarias we have seen this season were those shown by Lady NORTHCLIFFE, Sutton Place, Guildford (gr. Mr. J. Goatley). The plants were splendid examples, being large and shapely, and each was crowned with a profusion of flowers, some of the individual globes measuring almost 4 inches across. Adjoining the Calceolarias was a bright group of hardy flowers shown by the same exhibitor. (Silver-Gilt Flora Medal.)

Another display of these flowers was presented by J. A. YOUNG, Esq., Stone House, West Hill, Putney (gr. Mr. S. H. Street).

Messrs. BEN. CANT & SONS, The Old Rose Gardens, Colchester, showed bunches of garden Roses—nearly all single varieties, with a number of trained Rambler Roses in the background. It would be hard to choose the more beautiful among Dorothy Perkins, Philadelphia Rambler, and Lady Gay, as displayed by Messrs. CANT. (Silver Banksian Medal.)

Messrs. HOBBIES, LTD., Dereham Nurseries, Norfolk, showed Rambler Roses, the new Vitis Henryana, and the variegated Iris pallida flava.

Messrs. HUGH LOW & Co., Bush Hill Park, Middlesex, displayed some good Carnations, including a couple of large plants of Souvenir de la Malmaison Princess of Wales. Near by the same firm displayed plants of the "bottle brush tree," Metrosideros floribunda. (Silver Banksian Medal.)

Mr. H. BURNETT, St. Margaret's Vineries, Guernsey, showed some remarkably good Carnations arranged in a pretty setting of Asparagus Sprengeri and Smilax. The variety Mrs. H. Burnett is a charming flower of delicate salmon pink colour. Other good vases were those of Glacier (white), The President (crimson), and Lieut. Peary (white). (Silver-Gilt Flora Medal.)

Sir SAMUEL SCOTT, Westbury Manor, Brackley (gr. Mr. F. Tappin), exhibited a nice batch of Souvenir de la Malmaison Carnations. (Silver Flora Medal.)

H. L. BISCHOFFSHEIM, Esq., Warren House, Stanmore (gr. Mr. Ellis), staged a group of Carnation plants that were carrying very large flowers and had strong, robust growths. (Silver-Gilt Flora Medal.)

W. JAMES, Esq., West Dean Park, Chichester (gr. Mr. W. H. Smith), showed a magnificent plant of Souvenir de la Malmaison Carnation in a polished tub. As an example of good culture and training, the specimen was unique. (Bronze Banksian Medal.)

Messrs. PAUL & SONS, The Old Nurseries, Cheshunt, staged a mixed group of flowering subjects. They had many garden Roses, principally single varieties, an interesting display of ornamental hardy foliage, a number of hardy flowers, including some good Pæonies, sprays of Abutilon vitifolium and Fremontia californica; and two new Rhododendrons, named Essex Scarlet and John Bennett Pöe respectively.

Messrs. KELWAY & SON, Langport, Somerset, showed very large collections of Pæonies, Delphiniums, and Pyrethrums. A new Delphinium, named Queen of Spain, is of a true cobalt-blue colour. (Silver Banksian Medal.)

Messrs. GEO. BUNYARD & Co., Maidstone, Kent, exhibited many flowers from the open—Roses, Rhododendrons, Kalmia latifolia, Pernettya mucronetia, Poppies—including the Iceland and Oriental types, Pyrethrums, Irises, Lilies, &c. (Silver Flora Medal.)

Messrs. R. H. BATH, LTD., Wisbech, showed vases of named varieties of Pyrethrums and other garden flowers. (Bronze Banksian Medal.)

Messrs. CHEAL & SON, Crawley, displayed a large assortment of sprays of ornamental foliage trees—Oaks, Elms, Maples, Mountain Ash, Laburnums, Berberis, Pyrus Aria, &c. The soft yellowish-green tint of Quercus Concordia is very pleasing. Other shrubs and trees were in flower, Olearia stellulata being shown in fine condition. Mixed in the group were a number of hardy flowers, while trusses of Rhododendron flowers gave a bright appearance to the whole. (Silver Banksian Medal.)

Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. E. Beckett), exhibited a rich and varied assortment of coloured foliage and flowering trees and shrubs. The display occupied a large table running the entire length of the Hall from east to west, and comprised almost all the best and showiest subjects of this type of garden plants. (Silver-Gilt Flora Medal.)

Messrs. BAKER, Lichfield Street, Wolverhampton, showed an excellent strain of Aquilegias. The vases of flowers were all named varieties. The Bride is a charming creamy-white flower with a suspicion of rose in the spurs. Village Belle is conspicuously large. The dwarf A. Stuarti was exhibited growing in a pan. The flowers of this hybrid are larger than those of the garden species, and it has very restricted spurs. The inflorescences attain a height of about 9 inches or a foot. Messrs. BAKER also displayed bunches of Zonal Pelargoniums. (Silver Banksian Medal.)

Mr. R. C. NOTCUTT, Woodbridge, showed a selection of hardy flowers, among which the double Lychnis viscaria splendens was charming. (Silver Banksian Medal.)

Messrs. DOBBIE & Co., Rothesay, showed an admirable strain of Aquilegias, the flowers being large, the colours well selected, and the spurs long. In the centre of the collection were a few species of Aquilegia, including the scarlet and yellow A. canadensis elatior, A. alpina, the double form of the white A. vulgaris, and the curious button-like A. sibirica flore pleno. (Silver Flora Medal.)

Mr. AMOS PERRY, Winchmore Hill, and Enfield, Middlesex, showed a batch of hardy flowers of most of the finer kinds now in season. Varieties of Papaver orientale were a feature, some of the shades seen in the flowers being quite a pale salmon. Ixiolirion tataricum was shown in excellent condition. We also noticed a fine batch of Lilium monadelphum. (Silver Flora Medal.)

Mr. G. REUTHE, Fox Hill Hardy Plant Nursery, Keston, Kent, had a brilliant display of showy border flowers and alpine plants—Saxifraga pyramidalis, Campanula thyrsoideus, Pyrethrums, Irises, Tree Pæonies, &c. (Silver Banksian Medal.)

Messrs. R. WALLACE & Co., Kilnfield Nurseries, Colchester, staged a group of herbaceous flowers. A feature was a batch of hybrid Heucheras, with colours ranging from white to crimson. Oriental Poppies in variety were gorgeous. Pentstemon glaber is a fine thing. Irises, Lilies, Pyrethrums, Sparaxis, Lupins, and many other border flowers were included in the display. (Silver Flora Medal.)

Messrs. BARR & SONS, 11, 12, 13, King Street, Covent Garden, London, showed a batch of hardy flowers—Lupins, Irises, Oriental Poppies, Aquilegias, Campanulas, &c. The double Lychnis viscaria splendens is most ornamental. The bright pink flowers are crowded on the long flower spikes. (Bronze Flora Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, S.E., showed boxes and pans of Alpine plants, Carnations, Richardia Elliottiana, and the white Phyllocactus Cooperi. (Bronze Flora Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, London, N., staged a batch of Verbenas.

Lady LISHINGTON, Stokke, Great Bedwyn, Hungerford (gr. Mr. S. R. Day), exhibited a group of Alpine and rock garden plants.

Mr. JAMES DOUGLAS, Edenside, Great Bookham, Surrey, showed vases of garden Irises and the new hybrid Dianthus Lady Dixon.

Messrs. CARTER & Co., High Holborn, made a very pretty exhibit of their new double blue Lobelia "Holborn Blue," utilising a number of well-grown Gloxinias as an edging to the group.

Messrs. GILBERT & SON, Bourne, Lincolnshire, displayed Anemones, Aquilegias, and Irises. The brilliant King of Scarlets Anemone was a notable feature. It is aptly named. (Silver Banksian Medal.)

Mr. ANTHONY WATERER, Knap Hill Nurseries, Woking, Surrey, displayed a dozen varieties of Rhododendrons, in trusses, on exhibition boxes.

Messrs. V. & B. HAIG, Castle Hill Nurseries, Maidenhead, showed a new Zonal Pelargonium of strong-growing habit, with large rose-pink flowers named Queen of Denmark.

Mr. MAURICE PRICHARD, Christchurch, Hants, made a magnificent contribution of hardy flowers, which exhibited the excellent cultivation usually seen in collections from this nursery. In the centre were flowers of some of the showiest varieties of Oriental Poppies, and, in addition, we noticed Heucheras, including H. Plume de Feu, a variety with brilliantly-coloured flowers of larger size than those of H. sanguinea; Aster sub-cœruleus, Liliums pyrenaicum and Szovitzianum, Campanula glomerata, double and single Pæonies, Hemerocallis flava, and flowers of many other good border plants. (Silver-Gilt Banksian Medal.)

Messrs. W. BULL & SONS, King's Road, Chelsea, exhibited a small group of stove and greenhouse foliage plants. Dracæna Prince Monuk Bey, with reddish, sword-like leaves, is a very effective variety.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., made a large exhibit of Streptocarpus. The plants of this strain only develop foliage of moderate size, but the flowers are numerous, and exhibit great variety of colour.

The GUILDFORD HARDY PLANT COMPANY, Guildford, exhibited a small collection of hardy flowers.

Mr. W. J. GODFREY, Exmouth Nurseries, Devonshire, contributed some very good varieties of decorative Pelargoniums, showing well-grown plants in pots, also flowers of some pretty varieties of Papaver orientale. (Silver Flora Medal.)

Mr. T. E. WALTHAM, 97, Upper Tulse Hill, S.W., exhibited stereoscopic coloured photographs of flowers, the effects of which were startlingly real. Mr. WALTHAM stated that his process of reproducing nature in colours differs somewhat from the three-colour process of colour photography, but he relies upon the negative to give him the colour-values of the object to be photographed. The three-colour process, while theoretically perfect, is not yet altogether successful in actual application, the breaking up and subsequent re-blending of the three primary constituents of white light presenting considerable technical difficulties. Mr. WALTHAM utilises the camera and its accessories up to the very last stage in his process, but here, at the point at which practice begins, as it were, to get out of step with optical theory and to lag behind, he substitutes an after-treatment of his own devising, and with most successful results.

AWARDS OF MERIT.

Gloriosa Rothschildiana citrina.—This is an interesting variety of the magnificent species, and was illustrated in the *Gardeners' Chronicle*, September 16, 1905. The flowers are yellow, except towards the centre, which is greenish, and there is also a purple mark along the centre of each segment. Shown by the Hon. WALTER ROTHSCHILD, Tring Park.

Papaver orientale "Mrs. Perry."—The flowers are of rosy or reddish salmon colour, with black blotch on each segment.

P. orientale "Queen Alexandra." — This variety is of pure salmon colour, the segments being also blotched as in the preceding variety. Both the Papavers were shown by Mr. AMOS PERRY, Winchmore Hill Nurseries.

Rhododendron Gomer Waterer.—This is one of the newer varieties of hardy Rhododendrons, it being four or five years since it was first exhibited. The flowers are white flushed with pink, with yellow spotting on the uppermost segment, and are produced in dense "trusses." The leaves of this variety are about 3½ inches in width, giving to the plant a very handsome appearance. We have reproduced at fig. 160 a photograph of the plant placed before the Floral Committee.

Rhododendron "Viscount Powerscourt."—A hardy variety, with vinous red flowers and prominent blackish markings on the upper segments. These Rhododendrons were shown by Messrs. **Jno. Waterer & Sons, Ltd.**, Bagshot, who had also a pink variety named Moonshine that may be recommended for its charming and attractive flowers.

Verbena "Snowflake."—A pure white variety of V. hybrida, apparently of the same habit as Miss Willmott and others of that section. Shown by Messrs. **W. Cutbush & Sons**, Highgate.

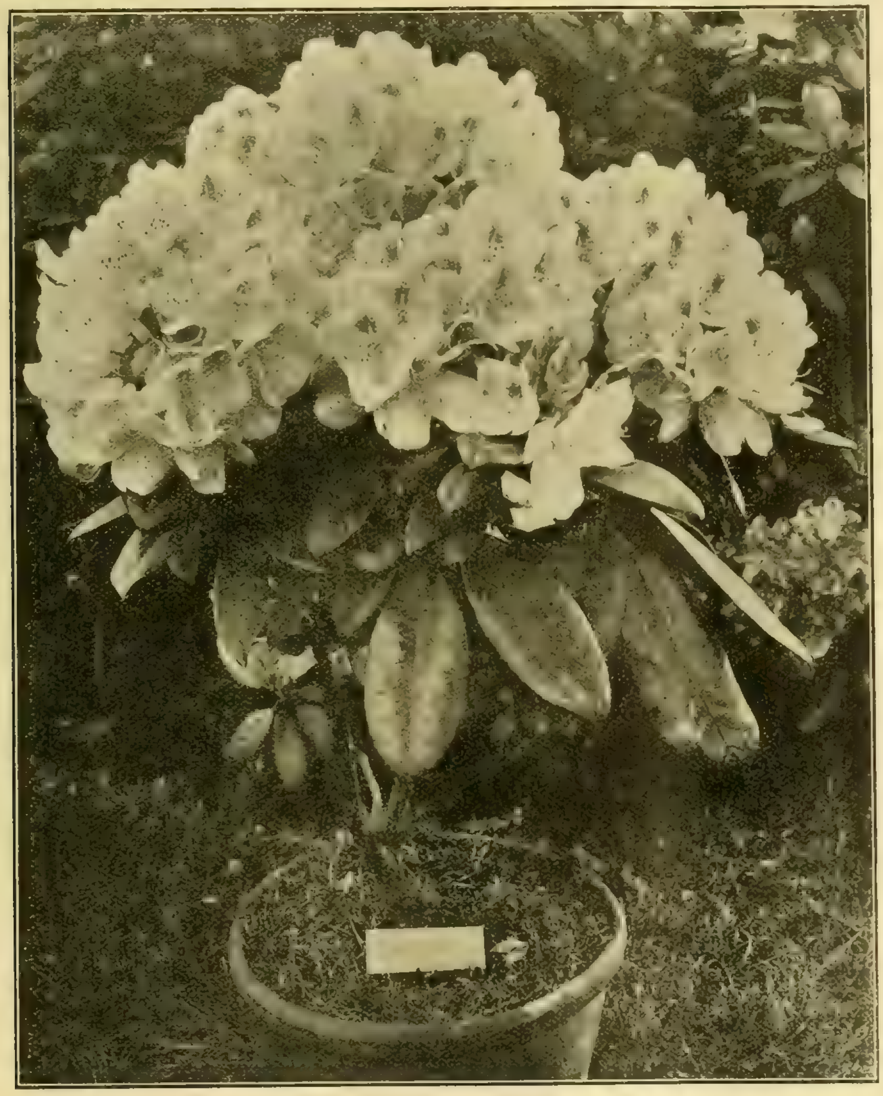


Fig. 160.—PLANT OF RHODODENDRON GOMER WATERER: FLOWERS WHITE, FLUSHED WITH PINK.

(Awarded an Award of Merit by the R.H.S Floral Committee on Tuesday last.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), De B. Crawshay, W. A. Bilney, H. Little, Francis Wellesley, Arthur Dye, R. G. Thwaites, G. F. Moore, H. T. Pitt, A. A. McBean, F. Menteith Ogilvie, H. G. Morris, J. Charlesworth, W. H. Young, W. H. White, H. A. Tracy, W. Bolton, W. Boxall, H. Ballantine, and Harry J. Veitch.

Sir **Frederick Wigan**, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), was awarded a Silver-Gilt Flora Medal for a very nice group of choice varieties. The centre was a grand specimen of the pure white Cattleya Mossiæ Wageneri, with eight flowers, backed by the brilliant crimson Masdevallia Harryana. The forms of Cattleya Mossiæ included the beautiful C. M. Mrs. Egerton Grey, like a good C. Reineckiana, but with a lavender tint on the flowers; and beside it a very handsome form of C. Reineckiana. Among fine hybrids were Zygonisia Rolfeana ×, with pretty sprays of blue-tinted flowers; forms of Lælio-Cattleya Martineti, L.-C. Canhamiana, L.-C. Dora magnifica, and other Lælio-Cattleyas; Odontoglossum Wilckeanum, O. Rolfeæ, Cypripedium Gowerianum magnificum, &c. Of species and varieties noted were a good selection of Odontoglossum citrosmum, with one of O.-c. album; Oncidium monachicum, O. macranthum, and other large-flowered Oncidiums, Brassavola Digbyana, Thunia Marshalliana, T. Veitchiana, Aerides crassifolium, Phalænopsis-Schröderiana, &c.

H. S. **Goodson**, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), received a Silver-Gilt Flora Medal for an extensive group, very effectively arranged. At the back were good Cymbidium Lowianum and other species with graceful sprays, the group being made up of large-flowered Cattleyas, Lælio-Cattleyas, Odontoglossums, &c., the front finished with pale rose-coloured Miltonia vexillaria and Maidenhair Ferns. Among the Cattleyas, the best were C. Mendeli, H. A. Tracy (which had previously secured an award), and C. M. Herbert Goodson, both fine flowers, with carmine crimson front to the lip. The Lælio-Cattleyas included a very richly-coloured L.-C. Fascinator, a specially fine flower, with very dark claret-purple front to the lip; a good L.-C. Wellsiana, and several excellent L.-C. Canhamiana. The Odontoglossums had one or two spotted forms, and others remarked were Brasso-Cattleya Digbyano-Mossiæ, &c.

Messrs. **Charlesworth & Co.** staged a fine group, in which the Lælio Cattleyas were specially well displayed, the forms of L.-C. Canhamiana and L.-C. Fascinator being in great variety. L.-C. Canhamiana King Edward VII. was a very handsome dark variety; L.-C. Aphrodite, "Brightness," a neat form with a dark velvety crimson front to the lip; two excellent L.-C. Clive well represented that pretty hybrid; L.-C. G. S. Ball gave bright orange colour; and others appeared to advantage. The Odontoglossums included good O. crispum, the pretty hybrid O. Phoebe, O. crispo-Harryanum, &c., and others noted were a nice lot of Phalænopsis Rimestadtiana, and the fine P. violacea Heaton variety, &c. (Silver-Gilt Flora Medal.)

F. **Menteith Ogilvie**, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), had a charming little group, the centre of which was composed of varieties of Cypripedium callosum Sanderæ and C. Maudiæ, and the two sides of a number of excellently well-flowered white Cypripedium niveum. Mr. **Ogilvie** also showed Cattleya Mossiæ Wageneri, xanthoglossa, and C. M. W. Stella, Cypripedium bellatulum album, C. Honoræ, C. Lawrebel, "Shrubbery variety," and a few others. (Silver-Gilt Banksian Medal.)

Sir **Trevor Lawrence**, Bart., Burford (gr. Mr. W. H. White), showed a fine and interesting selection of rare Orchids, in the centre of which was a specimen of the elegant orange-coloured Dendrobium Jerdonianum, covered with bloom; with it were the bright yellow Lælio-Cattleya Sunrise; several typical Odontoglossum crispum, one having a spike of sixteen large flowers; Masdevallia Harryana miniata, bright scarlet; M. H. luteo-oculata, M. Lindeni purpurea, M. Barlaeana, Cattleya Eurydice, Epidendrum paniculatum, with a large head of pretty rose-pink flowers; the singular little E. organense, E. atropurpureum Randii, and other Epidendrums. Several finely-flowered Thunias, Brasso-Cattleya striata, Angræcum Scottianum, the singular dwarf Polystachya zambesiaca, and others enumerated in the list of Awards. (Silver Flora Medal.)

Messrs. **Sander & Sons**, St. Albans, staged a fine group, in which were several remarkable Odontoglossums, the most distinct of which was O. Fascinator "Our King," raised from a good O. crispum crossed with a fine O. Adrianæ. The little plant had a flower very closely like a good blotched O. crispum, but with proportionately broader segments than O. crispum even of the best type generally displays. The sepals were nearly as broad as long, and almost equal to the petals, and the lip was also finely formed, traces of O. Adrianæ being visible in the slight brown fringing of the basal part of the lip. The pretty flower was white, evenly blotched with chestnut brown. O. ardentissimum was shown in a good variety, finely marbled with rose-purple, and among the Lælio-Cattleyas were a good series of L.-C. Canhamiana, including var. Meteor, with glowing and richly-coloured flowers. Others remarked were a very dark-coloured Cymbidium Huttoni, a small lot of the pretty Phaius Cooksonæ, with eight spikes, &c. (Silver Flora Medal.)

Messrs. **Hugh Low & Co.**, Bush Hill Park, Enfield, staged a group in which their excellent strain of Cattleya Mendeli was well represented. Among them were good typical coloured forms and some very pretty light varieties, the most promising of which was C.-M. "The Queen," a very delicate blush-white flower. Also in the group were Cattleya Mossiæ, some showy Lælio-Cattleyas, Odontoglossum hastilabium, Epidendrum radicans, Oncidium cornigerum, O. leucochilum, Anguloa Clowesii, varieties of Lælio purpurata, &c. (Silver Flora Medal.)

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent the finely-coloured Cypripedium Lawrenceanum Hackbridgense, C.-L. "Westfield variety," a very large and finely-formed flower with broad, flat dorsal sepal; C. Lawrenceano-barbatum, a massive flower well intermediate between Lawrenceanum and C. barbatum grandiflorum; Lælio-Cattleya Pacuvia gigantea, a fine improvement on the original, L.-C. Mrs. F. Gould (Lawre-Mossiæ × tenebrosa), of a very light rose colour, veined with claret-purple and with bright ruby-purple lip; and the chastely-tinted C. Mendeli, Mrs. Frederick Knollys. (See Awards.)

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), sent four varieties of Cattleya Mossiæ of excellent quality, and including the fine old varieties aurea and Dormaniana; also Lælio-Cattleya Martineti, L.-C. Canhamiana, "Gatton Park variety"; L.-C. Canhamiana alba, a very handsome white-petalled form with crimson-purple front to the lip; and L.-C. Phoebe, "Gatton Park variety," a rich orange-coloured flower, with claret-coloured front to the lip. Both the latter secured Diplomas.

Baron Sir H. Schroder (gr. Mr. Ballantine) sent Cymbidium insigne (Sanderi), "The Dell variety," a very fine white flower, with the large labellum closely marked with rose-purple; C. superbiens-Curtisii, a large flower and well intermediate; and the grand white-petalled Cattleya Mossiæ Reineckiana, "The Baron." (See Awards.)

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), showed a large broad-petalled form of Lælio-Cattleya Canhamiana.

Henry Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent Cypripedium Curtisii exquisitum, a large variety with distinctly marked leaves, and C. Javanico-superbiens, "Little's variety," which is nearest to C. superbiens and a good large flower.

AWARDS.

First Class Certificate.

Cattleya Mossiæ Reineckiana "The Baron," from Baron Sir H. Schroder (gr. Mr. Ballantine). A noble flower of large size and broad in all its parts. Sepals and petals pure white. Lip very broad and crimped at the margin, beautifully freckled and tinged with rose-purple of varying shades.

Cattleya Mossiæ Victoria Regina, from Messrs. Stanley & Co., Southgate. Sepals and petals white, delicately tinged with lavender; lip broad, freckled with pale bluish purple. A very fine and distinct flower.

Awards of Merit.

Cattleya Mendeli "Mrs. Frederick Knollys," from Francis Wellesley, Esq., Westfield (gr. Mr. Hopkins). One of the most beautiful and delicately-tinted forms of C. Mendeli, resembling the albino C. M. alba, but with a slight and delicately-blended tinge of blush-pink on the petals and front of the lip, the disc of which is pale yellow. A charming flower.

Oncidium monachicum, from Sir Frederick Wigan, Bart. (gr. Mr. W. H. Young). A fine species of the O. serratum section. Dorsal sepal, broad, concave, and arching over the petals, which are crisped and united at the pale yellow margins, the rest of the flower being brown. Sepals ovate, stalked, lip ligulate.

Lælio-Cattleya Kathleen Grey, from Sir Frederick Wigan, Bart. A showy and distinct flower between L.-C. Canhamiana and L. tenebrosa, of a bright and attractive colour, showing much of L. tenebrosa.

Thunia Veitchiana, "*Burford variety*," from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). An improved form of a very graceful hybrid. The tall leafy stems bore drooping racemes of pretty white flowers with dark-rose purple markings on the lip, the disc being reddish orange.

Odontoglossum crispum xanthotes Walkeræ, from W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Bunney). A fine form with pure white flowers having several orange-coloured blotches.

Phalænopsis violacea, "*Heaton variety*," from Messrs. Charlesworth & Co., Heaton, Bradford. A large and finely-formed variety of true P. violacea.

Lælio-Cattleya Canhamiana "*Meteor*," from Messrs. Sander & Sons, St. Albans. A very handsome and brightly-coloured form, the front of the lip being of a glowing purplish crimson colour.

Botanical Certificates.

Luddemannia Pescatorei, from Miss Willmott, Warley Place, Great Warley, Essex (gr. Mr. F. Gooch). A remarkable and rare species having the growth of an Acineta, and a pendulous inflorescence some 4 feet in length, the lower third bearing attractive flowers with the sepals yellow marked with purple-brown, petals and lip yellow, the fleshy lip having the front lobe triangular and continued into a reflex apex; the disc is hairy, and has a raised fleshy callus and some crimson spots at the base. It has been flowered previously at Kew and Glasnevin.

Quekettia Jenmani, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A singular tufted little plant with hard leaves 2 inches in length and numbers of small whitish flowers.

Epidendrum confusum, from Sir Trevor Lawrence, Bart. A pretty species resembling a very large E. fragrans Flowers creamy white with purple lines on the lip.

Diploma Awards.

Cypripedium Lawrenceanum.—*1st Diploma.*—C. Lawrenceanum Hackbridgense, from Francis Wellesley, Esq. *2nd Diploma.*—C. Lawrenceanum Marjorie (of C. L. Hyeanum class), from F. Menteith Ogilvie, Esq.

C. Lawrenceanum Hybrids.—*1st Diploma.*—C. gigas "Oxoniensis, from F. Menteith Ogilvie, Esq. *2nd Diploma.*—C. Maudiæ, from Menteith Ogilvie, Esq.

Cattleya Mossiæ.—*1st Diploma.*—C. Mossiæ Reineckiana "The Baron," from Baron Sir H. Schroder. *2nd Diploma.*—C. Mossiæ Wageneri Stella, from F. Menteith Ogilvie, Esq.

C. Mossiæ Hydrids.—*1st Diploma.*—L.-C. Phœbe, "Gatton Park variety; *2nd Diploma.*—L.-C. Canhamiana alba, both from Jeremiah Colman, Esq.

Fruit and Vegetable Committee.

A fruiting branch of the Cherry Frühste der Mart cut from a standard tree growing in the open ground was exhibited by Messrs. Paul & Sons, The Old Nurseries, Cheshunt. The variety is exceedingly early, for the fruits were already coloured light red.

Award of Merit.

Cucumber Bounteous.—Fruits of this new Cucumber were shown by Mr. S. Mortimer, Rowledge Nurseries, Farnham. It was raised from a cross effected between the varieties Delicacy and Progress. The fruits shown were 18 inches or more long, of perfect form, and having dark-coloured, smooth skin.

THE LECTURE.

At the afternoon meeting there were 118 candidates for Fellowship elected, and Sir George Watt read an exhaustive paper on "Tea and the Tea Trade." Sir George Watt, who is the author of a standard work on Indian economic products, referred to the introduction of tea to this country, its high price and duty, and the subsequent reduction of price; the present consumption of Tea per year in different countries, from which it appears that the United Kingdom comes third with 8.44lb. per head, Western Australia being first and South Australia second. The discovery of the Tea plant in India, and its rediscovery in Assam; the controversy of botanists in regard to the identity of the plant, Fortune's mission to China, and other interesting subjects connected with the history of Tea formed the first part of the paper. In the second part Sir George Watt reviewed the present condition of the industry, described superior and inferior Tea plantations, the rules of cultivation that should be observed in plantations, &c. He said planters should not be blenders, but should grow one variety alone, and do all they can by "rogueing" to keep their entire stock to one variety. The very best Tea is obtained when in picking only the bud and one leaf are taken, but even if the bud and two leaves are used the "gathering" is of better quality than formerly. Sir George also showed a very large number of lantern slides and other specimens illustrative of the subject. The papers will be very valuable for reference when it is published in the Society's *Journal*. Sir Jno. T. D. Llewelyn, Bart., presided at the meeting, which was only poorly attended.

ROYAL BOTANIC.

June 13, 14, 15.—The great summer exhibition of the above Society was held on these dates in the Society's gardens, Regent's Park. The spacious grounds enabled the exhibiting of large displays of horticultural implements, etc., in addition to the usual exhibits of flowers and fruits. The exhibits were accommodated in tents, and around about on the lawns were exhibited conservatories, summer-houses, lawn-mowers, garden tents, statuary, fountains, garden seats, and many horticultural sundries. In the large conservatory but one exhibit was displayed. This was a splendid collection of orchard house trees—Peaches, Nectarines and Plums, shown by Messrs. Rivers. The Roses shown by Mr. Geo. Mount were an outstanding feature of the show; indeed it would be difficult to find a better collection at any flower show. Hardy flowers were much in evidence, while good groups of Sweet Peas, Carnations, and Herbaceous Calceolarias were also seen. The Australian Colonies sent exhibits of fruits, cereals, timbers, and other colonial products. The attendance during the opening day was numerous, the weather being fine, although overcast. Messrs. Waterer's Rhododendrons attracted many visitors, the plants being just now at their best condition.

Messrs. Thos. Rivers & Sons, Sawbridgeworth, Herts, displayed three groups of pot fruit trees, principally Peaches, Nectarines, and Plums. One group was to the right of the main entrance of the conservatory, and was composed of Early Rivers' Nectarines. Another similar group on the left was comprised of plants of Cardinal Nectarine, Peach Duke of York, Crimson Galande Peach (a magnificent specimen), and Early Rivers' Nectarine. Another large group immediately opposite the entrance embraced plants of the new Peregrine Peach and Early Prolific Plum. All the trees were in splendid condition, and were carrying heavy crops of well-finished fruits. (Large Gold Medal.)

Mr. S. Mortimer, Rowledge, Farnham, Surrey, exhibited his new Cucumber described on this page, and a collection of American Carnations. (Silver Medal.)

Mr. Kelf, gardener to Miss Adamson, South Villa, Regent's Park, received a cultural commendation for a box of Dr. Hogg Peaches. They were beautiful fruits, splendidly coloured.

Lady Northcliffe, Sutton Park, Guildford (gr., Mr. J. Goatley), staged a large group of herbaceous Calceolarias. The plants were magnificent specimens, and were nicely displayed in a setting of Ferns. Lady Northcliffe also exhibited many hardy flowers. (Gold Medal.)

Messrs. Hugh Low & Co., Bush Hill Park, Middlesex, staged a group of Carnation plants and others of Metrosideros floribunda. The Carnations were almost all of the Souvenir de la Malmaison type. (Large Silver Medal.)

H. L. Bischoffsheim, Esq., Warren House, Stanmore (gr., Mr. C. J. Ellis), put up a large semi-circular group of Souvenir de la Malmaison Carnations. Some of the blooms were exceptionally large. (Large Silver-Gilt Medal.)

Edward Wagg, Esq., The Islet, Maidenhead (gr., Mr. D. Phillips), showed a semi-circular group of Carnations. The display occupied the end of one of the tents. Some nice plants of the yellow Cecilia were noticed. (Silver-Gilt Medal.)

Mr. Chas. Turner, Royal Nurseries, Slough, furnished one end of the central tent with a group of Roses, with other groups of Carnations and hardy Ferns on either side. Many climbing varieties were seen in the Rose group, of which bunches of garden varieties occupied the foreground. Among the Carnations were some choice specimens of the popular Princess of Wales and Calypso varieties. (Large Silver-Gilt Medal.)

Mr. G. F. Waters, Deanland Road, Balcombe, staged a pretty exhibit of American Carnations. (Silver-Gilt Medal.)

Beautiful as was the group of Roses shown by Mr. George Mount, Canterbury, at the recent Temple Show, the exhibit staged by him on this occasion quite surpassed it. He had a similar magnificent pyramid of the beautiful Frau Karl Druschki, immense blooms of the purest form and whiteness. Ulrich Brunner was also shown splendidly. Other beautiful varieties, such as Mrs. John Laing, Liberty, Catherine Mermet, Caroline Testout, Madame Abel Chatenay, Mrs. Ed. Mawley, &c., were also of the same superior quality. Boxes contained flowers of many less known varieties, while at the back were trained plants of Rambler kinds, and arches of the popular Crimson Rambler. (Large Gold Medal.)

Messrs. Wm. Paul & Son, Waltham Cross, Herts, put up a delightful group of pot Roses. In the foreground were many beautiful Tea and Hybrid Tea varieties, the rest of the group being composed of tall plants of Rambler kinds.

with standards between. The new single Hiawatha was prominent, but the most floriferous variety seen was "The Farquhar," the plants of which were literally smothered with long racemes of soft pink coloured flowers. Kathleen is another single Rambler of much merit. The H.T. Earl of Warwick was seen in good condition. (Large Gold Medal.)

Mr. George Prince, Longworth, Berks, staged a group of garden Roses, with vases of Tea varieties in the centre. Among these latter was a new flower labelled Madame Constante Soupert; the petals are rosy-buff coloured—a most delicate shade. The flower possesses a commendable form. (Large Silver Medal.)

Hobbies, Ltd., Dereham Nurseries, Norfolk, showed Rambler Roses, the new Vitis Henryana, and baskets of dwarf-growing Coleus. (Silver Medal.)

Messrs. John Waterer & Son, Bagshot, Surrey, displayed over 2,000 plants of Rhododendron in a large tent occupying over a quarter of an acre of ground. The plants were in their full beauty, and the show was delightful. Almost all the best varieties of this handsome flowering shrub were represented, many being varieties raised by Messrs. Waterer themselves in their Bagshot Nurseries. Gomer Waterer (fig. 160) was represented by a large plant, in which its claims to recognition were at once apparent. Another variety that received an award was Mum. This is a spreading white flower, with a beautiful yellow eye. One bed was entirely filled with varieties of Kalmia latifolia, a near relative of the Rhododendron, with interesting mobile anthers. (Large Gold Medal.)

Messrs. W. & J. Brown, Stamford and Peterborough, showed a mixed collection of flowering plants, mainly greenhouse subjects. They had also vases of garden flowers—Aquilegias, Pyrethrums, Lupins, Irises, Pinks, &c. (Silver Medal.)

Mr. Chas. W. Breadmore, Winchester, displayed vases of Sweet Peas in most of the newer varieties, including the beautiful orange and rose-coloured Helen Lewis, which received a certificate of merit. Mr. Breadmore also displayed a number of hardy flowers and a yellow self Viola named Royal Sovereign. (Silver-Gilt Medal.)

Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, put up a collection of showy garden flowers, and several boxes of choice Alpine plants. The dwarf-growing Aster sub-cœruleus was shown well. We also noticed several good plants of Cypripedium parvifolium. (Large Silver Medal.)

Messrs. Hogg & Robertson, 22, Mary Street, Dublin, showed many border flowers—Irises, Anemones, Ixias, and Ranunculus asiaticus, of which there was seen an admirable selection. (Large Silver-Gilt Medal.)

Messrs. Barr & Sons, 11, 12, 13, King Street, Covent Garden, staged a large number of the curious pygmy trees from Japan, some of which were reputed to be 150 years old. Messrs. Barr also exhibited a large array of herbaceous and garden flowers of the best kinds now in season. (Gold Medal.)

Messrs. G. & A. Clark, Ltd., Dover, showed hardy flowers and rock garden plants. (Silver-Gilt Medal.)

Mr. R. Rasmussen, Eastville Nurseries, Waltham Cross, displayed many plants of single Petunias, such as are used for bedding purposes. (Silver Medal.)

Messrs. Kelway & Son, Langport, Somerset, staged large groups of Pæonies, Pyrethrums, Delphiniums, and Lupins. Among the Pæonies were several new varieties. Lady Newnes is a new "single." The colour is rose-pink. Sir Arthur Middleton, another single, is also new, the colour being crimson. (Gold Medal.)

Messrs. John Peed & Son, West Norwood, London, S.E., had a small but exceedingly pretty display of Gloxinias, Begonias, and Streptocarpus. Adjoining these, the same firm displayed a group of Japanese Maples interspersed with flowering Clematis, and a collection of Alpine plants and hardy flowers. (Silver-Gilt Medal.)

Mr. John R. Box, West Wickham, staged a small rock garden and water pool, furnished with appropriate plants. (Silver Medal.)

Messrs. Reamsbottom & Co., Alderborough Nurseries, Geashill, King's Co., Ireland, showed many vases of St. Brigid Anemones. (Silver Medal.)

Mr. W. J. Godfrey, Exmouth, Devon, displayed baskets of show and regal Pelargoniums, including the beautiful Godfrey's Pride, a semi-double frilled flower, with a scarlet band round the frill, and many light forms of the border Poppy—Papaver orientale. (Silver-Gilt Medal.)

Mr. Amos Perry, Winchmore Hill, London, N., showed a selection of hardy flowers in season, including many light shaded flowers of the Oriental Poppies. (Large Silver-Gilt Medal.)

Mr. L. R. Russell, Richmond, Surrey, staged many vases of Pyrethrums, with a border of Ficus radicans variegata, Marantas, &c. (Small Silver Medal.)

Messrs. Watkins & Simpson, 12, Tavistock Street, Covent Garden, London, W.C., showed an admirable collection of Sweet Peas. The variety Mrs. Alfred Watkins is blush-rose in colour, the standards are broad, and the flowers are produced in fours on each stem. This variety received an Award of Merit, as did also the varieties E. J. Castle (rose-magenta) and Frank Dolby (lavender). (Large Silver-Gilt Medal.)

Colonial Exhibits.

The Victoria (Australia) State Department of Agriculture displayed many tinned, bottled, and dried fruits from the colony; also timbers, compressed vegetables, honey, preserves, &c. (Silver Gilt Medal.)

Western Australia showed a number of dishes of Apples, all commercial varieties, such as may be seen at the present time in Covent Garden Market. The same State exhibited cereals, wool, timbers, gums, &c. (Silver Gilt Medal.)

South Australia sent a large display of fresh fruits, principally Apples and Pears. We noticed the handsome Raspberry Pippin that attracted much attention at the recent colonial show at Westminster. Quinces are grown everywhere in the colony, and the large samples seen were sent to test the demand for this fruit in our home markets. Besides fresh fruits were seen dried and bottled fruits, wines, nuts, raisins, sultanas, &c. (Gold Medal.)

Miscellaneous Exhibits.

Among the miscellaneous groups Gold Medals were awarded to Messrs. Ransomes, Sims & Jefferies, Orwell Works, Ipswich, for motor and hand lawn-mowers; to Messrs. Thos. Green & Son, Ltd., Southwark Street, London, S.E., for lawn-mowers; Messrs. Alex. Shanks & Son, Ltd., Bush Lane House, Cannon Street, London, E.C., for lawn-mowers; Messrs. Duncan Tucker & Co., Ltd., Tottenham, London, N., for conservatories and plant-houses.

Large Silver Gilt Medals to Messrs. Merryweather & Sons, Ltd., for garden engines, hose piping, pumps, syringes, &c.; Messrs. Doulton & Co., Lambeth, S.E., for garden pots, ornamental vases, pedestals, &c.; Messrs. Henry Castle & Sons, Ltd., Baltic Wharf, Millbank, Westminster, S.W., garden seats; Messrs. John Unite, 291-293, Edgware Road, W., tents and garden furniture; Mr. G. W. Riley, Herne Hill, London, S.E., for rustic summer-houses, seats, &c.; Messrs. Pearce & Co., 644, Holloway Road, London, N., for greenhouses.

Silver Medal.—Mr. James Williams, 4a, Oxford Road, Ealing, for floral decorations; Mr. Geo. H. Sage, 71, Manor Road, Richmond, for flower displayers; Messrs. Liberty & Co., Regent Street, London, for artistic garden pottery.

LINNEAN SOCIETY.

June 7.—Professor W. A. Herdman, F.R.S., President, in the chair.

The President announced that he had nominated the following as Vice-Presidents for the ensuing year:—Rev. Canon Fowler, Mr. Horace W. Monckton, Lt.-Col. Prain, and Dr. A. Smith Woodward.

The General Secretary exhibited a small oil-painting on panel of Linnæus, after Pasch (sight measure 9¼ by 7¾in.), the property of Mr. Blackwell, which he had acquired as a portrait of Jean Jacques Rousseau (the Linnæa having been taken for pimpernel). He had detected the error by the close correspondence of a print engraved by C. E. Wagstaff, and published by Charles Knight for the Society for the Diffusion of Useful Knowledge. This print purported to be engraved from a portrait in the possession of Robert Brown, but it displayed a curtailment of the figure and accessories from the picture by L. Pasch which Robert Brown gave to this society in 1853 on his quitting the chair, the history of which is well known (*Proceedings*, 1888-90, pp. 24-25). The question was raised, could this small picture have been also in the possession of Robert Brown?

The first paper was by Mr. H. H. Haines, F.L.S., "On two new Species of Populus from Darjeeling," which, in the absence of the author, was read by Mr. C. B. Clarke, and illustrated by a series of photographs. Populus ciliata, Royle, was re-described, and the two new species characterised, namely, P. Gamblei, which may or may not be the species described by Dode from imperfect material, and P. glauca, Haines. Excellent material had been sent by the author, and had been shared between the National Herbaria of Kew and the British Museum.

Dr. G. H. Fowler presented two further reports dealing with Biscayan Plankton collected during a cruise of H.M.S. "Research" in 1900.

The last paper read was by Dr. Maxwell T. Masters, F.R.S., F.L.S., "On the Conifers of China," which was read in abstract by the General Secretary; it described the whole coniterfous flora now known, including the recent discoveries of Mr. E. H. Wilson and B. Hayata; no fewer than eight new species are fully set out, five of these being of the genus Picea.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL DINNER.

DONATIONS AMOUNT TO £2,121.

June 13.—The sixty-seventh annual festival dinner in aid of this institution took place on Wednesday evening last at the Hôtel Métropole. The Rt. Hon. Lord Balfour of Burleigh presided over a very large company. He was supported on the right by Sir Trevor Lawrence, Bart., and on the left hand by Sir Walter Smythe, Bart. For the rest the company represented all branches of horticulture.

After the Royal toasts had been celebrated with enthusiasm, Lord Balfour rose to propose the toast of the evening, that of "Continued Prosperity to the Gardeners' Royal Benevolent Institution." He thanked the audience for their reception, and said he hoped that nothing he should say would prevent them from translating that enthusiasm into hard cash before leaving. The institution was by no means a young one. It was also under Royal patronage, and this is never given in this country to an unworthy object. The institution had distributed a sum of money equal to £100,000 among deserving gardeners and their widows. Its management was above reproach. The work was done chiefly by amateurs, who did it freely and for the love they had for those who received the benefits. There were some 220 persons on the list of pensioners, and these required something like £4,000 a year. Beyond this, there were about 24 applicants which had been approved by the committee as needy and deserving, yet the funds were not sufficient to enable the committee to afford relief. There were of recent establishment two funds which he (the Chairman) thought were the corollary of the movement. The Victorian Era Fund was for the benefit of subscribers whilst awaiting election. The Samaritan Fund was the means of affording help to those in need who had not contributed to the funds, and for affording temporary help to those who, perhaps, would be ineligible for receiving permanent benefit. His lordship then read three letters, which showed how much the pensioners were helped by the aid the institution was enabled to afford them. One was from an ordinary pensioner, and the others from gardeners who had benefited from the two newer funds. The interest from invested funds was now £1,500, and the present expenditure cannot be kept below £4,000; therefore, it is necessary to raise £2,500 each year, and this to meet existing circumstances only. But in these days it was necessary also to make progress. Did he need to meet objectors who would talk of political economy? His lordship then went on to explain the circumstances under which gardeners who had done the very best they could to provide for their declining years, yet by, maybe, the wrong-doing of others, or, at any rate, by circumstances over which they had no control, were eventually reduced to a condition of poverty. Gardening, said his lordship, is a precious bond of union to those who partake in it, and there was no profession which is more generous to the success of others. After reciting several humorous anecdotes bearing upon the question, his lordship asked in terse and appealing words: "Have I made out my case?" I know, said he, you sympathise, but how much do you sympathise? It is that which interests me and that interests Mr. Veitch, your treasurer. His lordship resumed his seat amid loud and continued applause.

The toast was coupled with the name of Mr. Harry J. Veitch, treasurer, who said it was his privilege once again to return thanks for the institution. Lord Balfour, by his most eloquent speech, had placed him in a more difficult position than usual. If he felt any difficulty in replying for the institution, there was one point in which he had no difficulty, and one in which he would carry every member of the company with him, and that was in thanking his lordship for his presence that night, and for his eloquent pleading of their cause. Mr. Veitch then proceeded to relate some interesting particulars, amongst which he stated that the two oldest pensioners now on the fund were two widows. One of these widows succeeded to the pension of £16 per year after the death of her husband, who had previously received £20 per year. At an earlier date the husband had contributed 18 guineas to the funds of the institution, and subsequently he was paid £304, and his widow has received £377, making a total of £681! Another family furnished an instance of nearly similar circumstances, and the two families together had received £1,066, whilst they had contributed only £42. Was not the institution benevolent, asked Mr. Veitch? Mr. Veitch then referred to the fact that this year will complete the twentieth year that he has been treasurer to the institution. The funds 20 years ago supported 118 pensioners at a cost of £1,655 a year, but now the number is 220, and the cost £4,000. The investments were £21,000 then, against £40,000 at the present time. Their warm-hearted and liberal friend Mr. N. N. Sherwood was a trustee then, as now, and Mr. Willard was even then an auditor. There were still three members of the committee also who were members at that date, but they had not then the services of their valuable secretary, Mr. Ingram. The needs of the institution have grown very much, but Mr. Veitch explained many circumstances that, taken together, render it less easy than formerly to obtain money. Great praise was given the "auxiliaries," and Mr. Veitch announced that £100 had been received that night from Worcester, making the sum contributed by this auxiliary up to £1,000. Reading was doing equally well, but had not been so long established, and other branches in different towns were affording valuable aid. Owners of gardens had thrown open their gardens for the benefit of the institution. The late Lord and the present Lady Ilchester had been very kind, and sums of money had also been received from the musical societies connected with the names of "Monro" and "Sherwood." The executive was thankful for these and all other sources of income.

The toast of "Horticulture in all its Branches" was proposed in a sympathetic speech by Mr. Leonard Sutton, and responded to by Sir Trevor Lawrence, Bart., who took the opportunity to announce that the receipts at the Temple Show this year were £1,624, and the expenses £644, there being a clear profit of £980. The invested funds of the Royal Horticultural Society amounted to £18,600, and they had on deposit a further sum of £3,500. Sir Trevor referred to the distribution of plants and seeds from Wisley and other interesting circumstances.

The toast of "Our Chairman" was proposed by Mr. Jeremiah Colman.

The Chairman's List.

Mr. G. J. Ingram, secretary, announced that the sums on the chairman's list amounted to £2,121. Amongst the principal donations were these following:—Messrs. Rothschild and Sons, 100 guineas; James Veitch and Sons, 100 guineas; David W. Thomson (from friends in Scotland), £102; Covent Garden tables (George Monro), £135, (D. Ingamells), £62; Arthur W. Sutton, £50; Messrs. Hurst and Son, 50 guineas; Jeremiah Colman, Esq., 50 guineas; "Hurst and Son" Musical Society, £50; Leonard Sutton, Esq., £50; Messrs. Wood and Son, £30; &c.

The floral decorations of the tables and room were beyond praise There was one principal table, with six others extending from it. On the principal table the decorations were exceedingly choice and of a mixed character, including plants of Nepenthes growing in baskets. On the two central tables extending from this the flowers were entirely of Souvenir de la Malmaison Carnations. On the next two tables they were exclusively Roses, and on those at the extreme sides the flowers were of tree and mixed varieties of Carnations. At the foot of the numerous large mirrors on the wall were arranged fine sprays of richly-coloured Cannas, and the scheme throughout, which had been carried through by Mr. Jas. Hudson and his foreman, was of quite exceptional merit.

Obituary.

Robert Smith Baxter.—Many of our readers will learn with regret of the death of Mr. Robert Smith Baxter, son of the late curator of the Botanic Gardens, Oxford. He died recently at Putney, in his 52nd year, from acute pneumonia. The name of Baxter has been associated with the Oxford Gardens for over a century, dating back to the times of Williams and Daubeny, and the fame of these gardens was largely due to the energy and botanical and gardening knowledge of W. Baxter and W. H. Baxter. Mr. R. S. Baxter was the son of the late W. H. Baxter, and with him passes away the last of the name connected with horticulture. Mr. W. H. Baxter was for 45 years curator of the gardens. Those who have enjoyed the privilege of a walk through the gardens in his company must have been impressed with his knowledge of plants and of their requirements, and also enjoyed his fund of interesting information about the Oxford Gardens and the various collections therein. Mr. R. S. Baxter was his father's chief assistant at the time of his retirement, and he also then severed his connection with the gardens, to start in business as a nurseryman. He inherited his father's love for plants and also his father's willingness to tell all he knew about them.

ANSWERS TO CORRESPONDENTS.

Beans: *C. G.* We are unable to identify the species from the description you have furnished.

Carnation: *F. R.* The flower exhibits an abnormality known as median prolification, due to a continued growth of the floral axis. It is a malformation rather than a disease.

Correction. The exhibition of Begonias and Streptocarpus which our reporter inadvertently credited to Messrs. Ware, Ltd., at the Show of Colonial Produce held in the Royal Horticultural Hall last week, was from Messrs. J. Peed & Son, West Norwood.

Cucumbers Diseased: *B. T. A.* The plants are affected with the canker disease. They are too far gone to attempt any remedial measures now, and the better plan will be to turn out the plants and old soil, taking care to burn the diseased stems. In the younger stages of the disease lime and charcoal rubbed on the affected parts have arrested the canker.

Daisies on Lawns: *W. C.* Apply nitrogenous manures or the advertised "Lawnsands," with a view to causing the grass to over-grow and smother the Daisies.

Gardeners' Cottage: *Shaftesbury.* We do not consider that you can successfully make any claim either under the Agricultural Holdings Acts or the Allotments and Cottage Gardens Compensation for Crops Act, 1887, nor can you make a claim to "emblements." There is no Act of Parliament which protects you under the circumstances you mention. If, however, you are allowed to grow the plants, trees, and vegetables for the purposes of sale, and so keep the profits for your own benefit, you had better remove and sell as many of them as possible before your engagement comes to an end. If it is impossible to remove most of them before you leave, you had better ask your master as soon as possible how much he will be willing to allow you for what you leave behind, and if he refuses to allow you anything, you should try and get some local gentleman of position, such as your clergyman, to speak to your master on your behalf, or induce the British Gardeners' Association to represent the circumstances to the employer. You also ask whether you must leave the house at the date when your engagement is terminated. Of course, all this depends upon what was the actual arrangement made between you and your employer, but the natural inference would be that you were only to occupy the cottage as long as you were in your master's employment, and you would have very great difficulty in setting up a claim that the technical relation of landlord and tenant existed between your master and yourself, especially if the cottage is on the master's estate. *Lex.*

Grapes: *F. P.* The spotting is due to the fungus Glæosporium ampelophagum. See reply to *G. A.* in the last issue.—*Anxious.* We suspect that the injury is due to anthracnose. Cut out all diseased berries as soon as they appear and burn them.

Iris Disease: *F. S.* The plants are attacked with the disease referred to on p. 367 of our last issue, in which we give remedial measures.

Myrobalan Plum: *W. H. W.* We can only suggest frost as the cause of the injury. The exceptional weather experienced this springtime, with mild weather followed later by hard frosts and with periods of drought, have caused similar injuries to many outdoor plants.

Names of Plants: *J. W.* Pernettya mucronata.—*Cardiff.* 1 and 2, Asphodeline liburnica; 3 and 4, Aquilegia hybrids; 5, Thalictrum aquilegiifolium; 6, Iris sibirica var. lactea; 7, Iris pallida; 8 and 9, Papaver orientale vars.; 10, Saxifraga Aizoon; 11, Iris aphylla; 12, Saxifraga tenella; 13. Mertensia sibirica; 14, Anemone pennsylvania.—*W.* 1, Ulmus campestris; 2, Ulmus campestris suberosa; 3, Ulmus campestris. The minor forms of Elm are very numerous, and many cannot be recognised except by seeing the tree as a whole.—*G. F.* 1, Cotoneaster nummularia; 2, Pyrus Aria.—*A. E.* A good variety of Odontoglossum Adrianæ.—*T. B.* Both Dendrobium nobile. The other is Odontoglossum cordatum.—*J. U.* 1, Campanula glomerata; 2, Alchemilla alpina; 3, Tiarella cordifolia; 4, Antennaria tomentosa.—*Pinehurst.* Cratægus pyracantha.—*A D.* 1, Yellow Martagon Lily, Lilium pomponium, yellow variety; 2, Hesperis matronalis; 3, Inula, not in flower; 4, Columbine (Aquilegia); 5, Vinca major; 6, Centranthus ruber; 7, Thalictrum majus.—*H. L.* Verbascum phœniceum (purple flowered Mullein), *Bot. Mag.*, tab. 885.

Nectarines and Plums Casting their Fruits: *H. L.* It is not customary for these trees, especially Nectarines, to drop their fruits when about the size of Peas, and growing in a glasshouse. We think that if the atmosphere of the house has been kept in a suitable condition, the trouble is likely to have been caused by lack of sufficient water at the roots. Were the trees over-loaded and making an effort to lighten their own burden?

Pear Midge: *J. B.* The injury is caused by the Pear Midge. Spray the trees next season, just before the flowers are fertilised, with Paris green. By burning the fallen fruits many of the grubs will be destroyed.

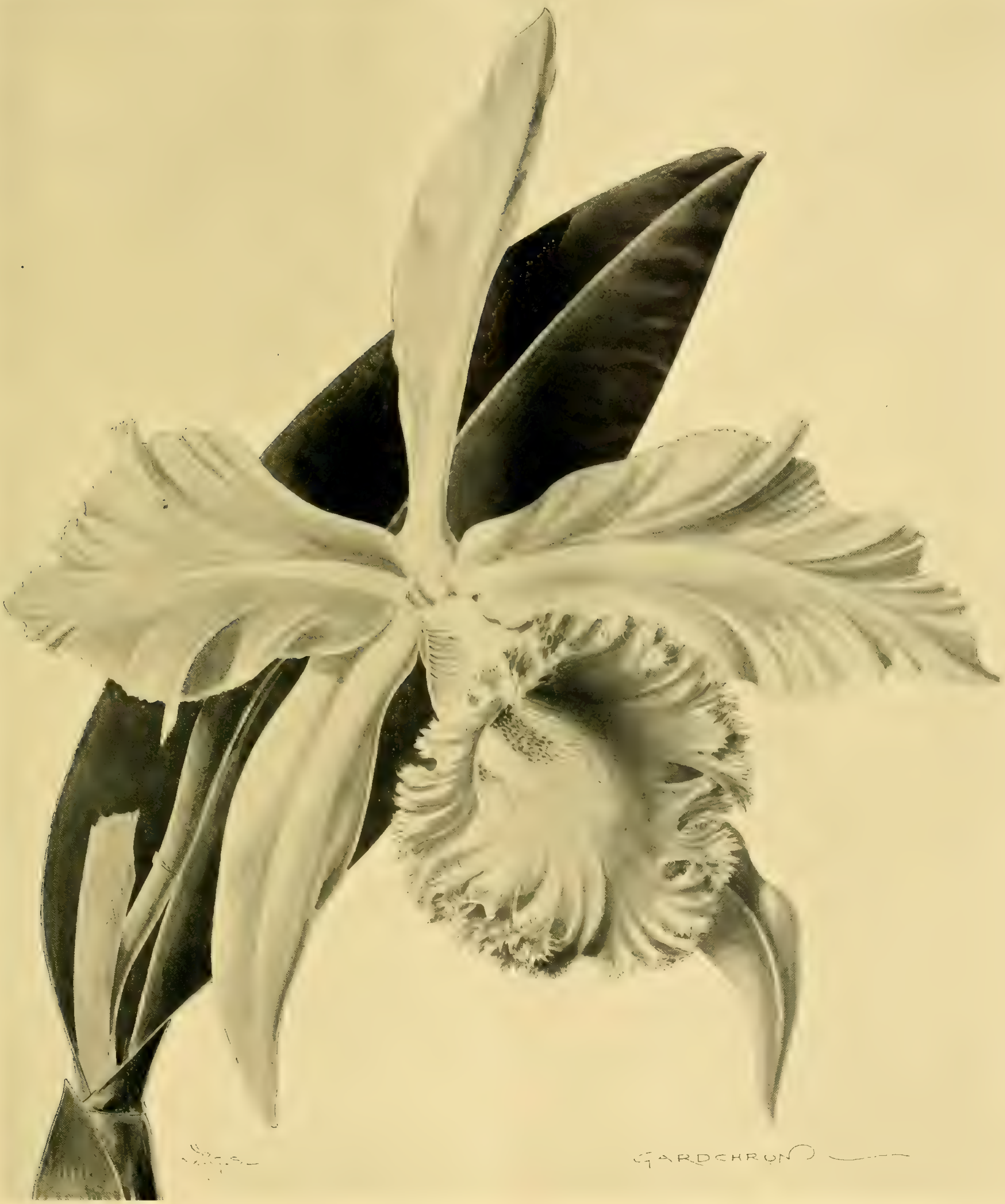
Pear Trees: *W. C.* Before advice can be given respecting the fungus, it is necessary for us to see and examine specimens obtained from the tree.

Potatos: *Violet.* There is no book on the subject. The advice respecting Potato haulm was to thin the shoots proceeding from each tuber to two or three. Nothing was said about pinching the haulms that are allowed to grow. The experiment is worth your trying.

Viola Seedlings: *C. S.* The flowers have no especial merit; indeed they are inferior to the majority of such seedings.

Communications Received. Irish Gardeners' Association R. J. A. Maurice L. de V. T. Rivers & Son German Pomological Society—C. Vuylsteke, Ghent—J. H. V.—F. B.—R. J. A.—L. C.—W. J. B.—G. H.—E. H. & Sons—F. W. M.—G. H., California—J. G.—J. S.—E. C. C. D.—J. C.—J. A. W.—Mrs. S. E.—J. T. S.—H. L.—W. L.—Grower—J. P.—E. B. & Son—G. H.—G. P.—L. C.—K. & S.

For Market and Weather Reports see page viii.



BRASSO-CATTLEYA "MRS. FRANCIS WELLESLEY" (REDUCED), THE LARGEST FLOWER OF ITS CLASS, AND MEASURING ONE FOOT FROM TIP TO TIP OF SEPALS. COLOUR OF FLOWERS WHITE WITH SHADES OF YELLOW AND ROSE.

(AWARDED R.H.S. FIRST-CLASS CERTIFICATE ON APRIL 17, 1906.)

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THE
Gardeners' Chronicle

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WATERING AND MULCHING.

IMPORTANT as these operations are in the hands of experienced and observant horticulturists, they may both fall far short of their full usefulness through the cultivator ignoring a few simple facts. They may, indeed, by neglect, be rendered positive sources of injury to the plants it is their object to assist. A beginner in gardening who has gained an accurate idea of the judgment needed in watering various plants in pots is on the high road to success in his calling, for he will have learnt one of the essential lessons—the value of close observation. But it is not alone when dealing with plants in pots that care and consideration are requisite in the supply of water, as such aid becomes necessary at times for plants or trees in the open ground, and mistakes lead to similar unsatisfactory results. Perhaps they are more frequent in the latter case, as the effects are not so quickly visible, and they are not so readily traceable to the precise cause as when plants are grown in pots; the end is, however, identically the same—either stunted, deficient growth, imperfectly developed fruits, or a shortened life-period.

If we admit that artificial supplies of water cannot equal those from natural sources in their beneficial influence, or, even further, that some degree of risk is unavoidable in such aid, still, that is not sufficient reason for neglecting to render the help which is in our power.

Familiar as all cultivators are with the results shown by plants in pots when insufficiently supplied with water, it does not seem that the enormous transpiration which takes place from the leaf surface of plants in the open ground is duly recognised. Experiments have proved that in hot, sunny weather at this time of year the amount of evaporation from fully-exposed plants is exceedingly great. A deciduous tree of moderate size has been recorded as transpiring 900lb. of water in a single day, and even with many vegetables the quantity given off under similar conditions represents a considerable proportion of their total weight. As regards farm crops, more definite information is available on the subject, and it has been shown that the cereals transpire during their short period of growth and maturation amounts varying in the British climate from 400 to 600 tons of water to produce a total weight of crop of about two tons at the time of harvesting.

When it is considered that, in addition to the water transpired by plant foliage, there is constant evaporation from the bare parts of the soil and some loss by drainage as well, an idea can be formed of the demands upon moisture in the land, even in ordinary seasons. In periods of deficient rainfall the matter assumes most serious proportions, and with fruit or ornamental trees it is not merely the loss of a season's crop or growth that is affected; many future years' progress may be unfavourably influenced.

In this as in other directions thorough cultivation is important even if only a partial means of preventing disaster. Well and deeply-cultivated land will furnish stores of moisture from its lower portions, when shallow and imperfectly worked soil is quite exhausted of water, or, if there is any below, it cannot rise within reach of the plant roots. The value of humus-yielding manures in the land is also abundantly proved at such times by their capacity for absorbing and retaining moisture. But when the occasion arises it is too late to correct mistakes in previous preparatory work, though several methods are available by which the soil water can be economised to the utmost advantage.

Nothing is more efficient for this purpose than the constant use of the hoe: a depth of two or three inches of well pulverised and frequently moved soil is equivalent to a mulch in its moisture-preserving influence. Not only is evaporation reduced, but the proportion in the upper layers of the soil is increased by the accumulation of supplies from below until the plant roots have used them. Under some circumstances this old and familiar means of surface cultivation in dry weather has produced more notable effects than the use of non-manurial mulchings. One reason for this is that the increased aeration facilitates nitrification where sufficient moisture is present for the operation to proceed; apart from the benefit arising from weed destruction.

If mulchings of any kind are used they are rendered more efficient by a thorough soil stirring previous to their application, also at intervals afterwards, though it may be necessary to remove the dressing for the purpose. Mulchings placed direct on to the hard surface of unmoved soil are of little value, and in several cases within our experience they have produced less effect than the hoeing alone, particularly as regards trees. For surface-rooting plants and vegetables it is an advantage to protect the soil around them from undue heat as well as by checking the evaporation, and then the mulching becomes of especial service. Beyond that, when water is supplied through manurial mulches it washes down some support to the roots, and at the same time keeps the surface both cool and moist longer than would be the case on unprotected soil.

The amount of water to be given when it becomes a necessity is often underestimated, and this is largely due to the want of some guiding facts or experience. I have never found any better means of judging what is needed than that founded on the rainfall of the district, taken in conjunction with the character of the soil and the special requirements of the crop or tree. An inch of rain is equal to rather more than 4½ gallons per square yard, and remembering that the conditions are very different when artificial watering is resorted to, compared with those at the time rain falls, evaporation being much greater, it may be taken that six gallons per square yard is not an excessive equivalent for a deficit of an inch in the rainfall. Somewhat less suffices on the heaviest soils, while in the lightest it may be increased with advantage, though in a usual way supplies do not equal those named, hence the injury which sometimes results from inadequate watering. It is not advocated that the total quantity should be given at one application; it is better to apply it two or three times, making use each time of about two gallons per square yard. The water should be poured on to the soil as gradually as possible after the surface has been stirred. If any dissolved manurial substance is supplied with the water it is much more efficient if used at the second and fourth subsequent alternate waterings. A common mistake is to supply rich stimulants in too strongly concentrated form; the weaker solutions are more readily taken up by the plants, are less likely to injure the roots, and are more like soil moisture ordinarily at the service of the plants, whether derived from organic or chemical manures. *L.C.*

THE PROPAGATOR.

In the present month there is much propagation needing to be done both in and out of doors. I will take Carnations (Dianthus caryophyllus) first, these being everybody's plants and great favourites just now. At this season the warmth of the soil is such that any of the various tribes, tree (remontant), border, Souvenir de la Malmaison, and the Picotees will readily form roots from layers, and the Pinks from cuttings.

It is seldom that the soil in which the plants are growing is the most suitable for surrounding the layers; therefore, the operator must make a mixture of hot-bed soil, one half; decayed leaf soil, one quarter; and sharp road grit or coarse clean sand, quarter (washed sea sand is suitable), or pit sand if tolerably free from loam; and, if not, it should be washed in two or three waters before mixing it with the other two ingredients, one quarter. Having prepared the mixture by repeated turnings and siftings through a quarter-inch meshed sieve, it will be ready for use. The number of layers selected from a plant may not exceed eight or nine, and may be as few as three to five, according to the wishes of the gardener, or the strength of the mother plant. If many are to be taken a furrow may be taken out round the plant, preferably with a trowel, and at a suitable distance, so as to accommodate the layers, or shallow holes thrown out if but few layers are to be made. Let this furrow, or these holes, be half filled with the prepared mixture; then proceed to select and trim the shoots for layering—viz., those which have not flowered and are of good strength, cleansing them of the bad and decayed leaves and trimming off the first pair of green leaves. The proper point at which to make the cut is where the first pair of leaves were placed, just in the middle of the joint, and on that side of the shoot that will be turned downwards, cutting halfway through and then upwards as far as the next joint. The "tongue" thus formed may be separated by inserting a barley or wheat corn, or slightly bent away from the shoot in the process of fixing it with a wooden hook into the soil, otherwise the cut will close and form a callus, and no roots will be emitted. The whole of the layer, up to the remaining leaves, should then be moulded up and made firm, keeping the layer erect in so doing and the wound open. The layers should, on the completion of the work, receive a thorough application of water, and afterwards whenever the soil approaches dryness. In about six weeks the "tongue" will have made sufficient roots to enable the layer to live when detached from the plant, and it may be carefully separated, taken up with a ball of earth, and potted or bedded out.

Carnations growing under glass may be similarly treated, small pots filled with soil being placed around them to receive the layers. All layered shoots should have their leaves shortened to one half of their length. Chrysanthemums may be similarly increased.

PINKS.

These plants are better raised from cuttings taken before the plants are freely in flower, otherwise the shoots become too hard. The same holds good for the tree Carnations, which, when the shoots get woody in consistency, make roots with difficulty, and decay when too soft. The cuttings are cut just under a joint, the latter split through for the space of a quarter of an inch, and a Carnation leaf stuck into the cleft, for the purpose of keeping it open, cutting off closely that which projects beyond the cleft. The cuttings are then placed singly in "thumbs" in a peaty soil, or several together in larger pots, and so that the leaves do not touch each other. The cutting pots may be sunk in well-moistened soil in a half-shady place, where the morning and evening sun can reach them, or they may be stood in a greenhouse, shading them slightly from the mid-day sun. Much moisture or shade are fatal to success, and the leaves must always be allowed to get quite dry after water is applied if bell glasses are used for those that are put under glass.

TABERNÆMONTANAS AND ALLAMANDAS.

During the month of June cuttings may be inserted of Tabernæmontana coronaria and T. citrifolia and of the Allamandas. These may consist of well-developed shoots 3 to 4 inches long, from which the lower leaves should be removed, so far as they are inserted in the soil, and the cuttings laid in a shady place in the warm house, so that the milky sap may get dry on the wounds. The cuttings pans should be crocked for about an inch in depth, and filled with equal parts of peat and sand; the cuttings inserted to the depth of an inch, slightly watered in, and covered with a bell glass, which must be wiped out daily. A bottom heat of 75°, and a moderate degree of moisture are requisites.

NEPENTHES.

These East Indian marsh plants form side shoots at the lower end of the stems, and as soon as they possess two or three pitchers they may be severed from the plant and put singly into small pots filled with peat and sphagnum in equal parts. These little pots should be placed on bits of stone, brick, etc., in a large pan, which should be filled with water up to the bottom of the pots, and the pan covered with a bell or handlight, and afforded a warmth of 80° to 85° Fahr. The cuttings form no callus, but send out roots in all directions.

AZALEA INDICA, KALMIAS AND RHODODENDRONS.

The most suitable period for striking cuttings of these plants is at the end of the growing season, say at the end of June, or in July, according to the development of the wood, which should not be too old, as the greater proportion of the roots emerge from the outer layer of rind, so far as this enters the soil; and also they form in the air. The Azalea succeeds better in a porous soil than in sand, as in the latter they are apt to die from lack of nutriment when not quickly potted; still, it is essential to cover the soil with a thin layer of sand. They need much moisture, a bed facing north, and a temperature of 45° to 50° throughout the winter. If air-roots form, apply a little clean wood moss between the cuttings. Until plenty of true roots have formed the cuttings should be accommodated in a propagating case, or covered with *cloches* provided with an opening at the top. The potting of the cuttings should be performed in the spring.

CHORIZEMAS.

Cuttings of half-ripened shoots taken with a heel or base of the older wood strike readily this month if placed in small pots filled with sandy peat covered with a layer of clean silver sand. The soil should be kept in a moderately moist condition under bell glasses, and in a greenhouse or cold pit. *F. M.*

THE ROSARY.

CULTURAL HINTS FOR JULY.

The staking and tying of maiden budded stocks should now be brought to a close. All suckers should be removed from the stocks, and if there are any luxuriant shoots taking the lead these should be now stopped for the benefit of the plant generally. Budding operations will now be in full vogue, for after the recent rains the bark of the stock will lift freely. Standard dwarf Briars should be budded first, to be followed by the seedling Briar. The Manetti and multiflora stocks grow later, and can be well left till the August budding. Great care should be taken in the selection of scions and in choosing buds from ripened wood only. If any doubt exists as to the proper maturation of the buds, use only the lower ones, as they will be the more forward ones. The buds worked on seedling Briars should be inserted below the ground line, as the bark at that point is more supple and opens better. In the case of Standard Briars, should dry weather prevail and the growth become checked, I find pruning a few inches off the end of each shoot induces lateral growths to develop, which brings up a fresh flow of sap; the bark will then open freely and the operation can be successfully performed. At the end of the month Rose-bushes should be gone over and any weak and useless shoots be thinned out to allow light and air to enter to ripen the remaining ones. Roses on their own roots that were struck from forced plants during March and April, and which are now in 3-inch pots, can be shifted at once into their 5-inch flowering pots. They should be plunged outside on a sweet hot-bed putting them at distances of 1 foot apart, where they will make rapid and robust growth, and providing the longest be pinched back once, good bushy plants will be formed by the autumn. Any maiden plants that have flowered can be cut back to about two eyes, in order to cause them to form fresh shoots, which will bloom later on. This procedure applies especially to the hybrid Tea, China, and Bourbon varieties. Those who desire to purchase Roses in the autumn should pay a visit to the July shows, or go to some reliable nursery where they can view the growing plants in flower and judge of their merits. *J. D. G.*

COLONIAL NOTE.

SINGAPORE.

The third of the large exhibitions of agri-horticultural and native industries will take place in Singapore on August 16, 17 and 18, 1906. The competitions are restricted to exhibits from the Malay Peninsula, but exhibits are also expected from Siam and the islands of the Malay Archipelago. Prizes are offered for all kinds of agricultural produce, cattle, poultry, horses, dogs, and other animals, flowers, ferns, ornamental plants of all kinds, fruits and vegetables, jungle produce, such as rattans, dammars, native drugs, and all kinds of native-made articles, curios, and the weapons and household articles of the wild tribes of the Malay Peninsula. There will also be an exhibition of machinery in action, especially of that relating to the rubber industry, as well as of tools and other apparatus shown by local and other firms. *H. N. Ridley, Director of Gardens, S. S., and Honorary General Secretary.*

RHODODENDRON YUNNANENSE, FRANCHET.

Among the Western Chinese Rhododendrons that are hardy, and have flowered in this country, there are two that stand out as the best ornamental shrubs for the garden. These are R. racemosum—a very distinct dwarf species figured in these columns July 16, 1892—and the one now shown at fig. 161. Both belong to the first batch of Yunnan Rhododendrons introduced to Europe, having been discovered and sent to France by the Abbé Delavay twenty years or so ago. For the flowering of the second and possibly larger batch from the same region (which we owe to the enterprise of Messrs. Jas. Veitch & Sons) we shall probably have to wait a few years longer.

Rhododendron yunnanense is a shrub of rather sparse habit and erect branches. The largest plants in cultivation are now 4 to 5 feet high, but it is probable they will attain to a stature twice as great. The leaves are 2 to 3 inches long and about ¾ inch wide, tapering to an acute apex, and, more gradually, to the base. They are dark, dull green above, paler green beneath both surfaces, and, the lower one especially, are dotted with minute scales. The flowers, as will be seen from the illustration, are borne in several clusters crowded together at the end of the branch, one being terminal, the others springing from the axils of the uppermost leaves. Each flower is from 1½ to 2 inches across, the corolla being white, with the most delicate blush tinge. The upper lobes are spotted with blood-red. The calyx is very small, but is thickly covered with green circular scales, which extend also down the peduncle.

This Rhododendron flowers in the early part of May, and is one of the most beautiful of the species which flower at that time. Its great charm consists in the peculiarly delicate colouring of its flowers. The flowers are produced so profusely as to almost hide the foliage, and the plant has, in consequence, very much the aspect of an Azalea. The flowers have, however, the ten stamens and evergreen leaves of the true Rhododendrons. The one failing of the species as an ornamental shrub is the sparse habit, which has already been alluded to, and which is chiefly due to the narrowness and comparative thinness of its leaves. *W. J. Bean.*

WATER GARDENS.

(Continued from page 390.)

AMPHIBIOUS PLANTS.

A SELECTION of the best amphibious plants for the low banks and marshy shallows would include all the Parnassias, particularly caroliniana and palustris, several forms of the water Forget-me-not, Myosotis palustris, the marsh King Cups, Caltha palustris, and its double and monstrous forms; C. parnassiæfolia, and C. biflora. whose flowers are white and of refined beauty. The flowering Rush, Butomus umbellatus, is capable of very pleasing effects when it fills a channel, but needs frequent reduction of its bulk. Deer Grass—so-called—a pretty rosy-flowered Melastomad of Nettle-like character, a foot or two high, properly called Rhexia virginica, and the Worm Grass, Spigelia marilandica, a Cuphea-like plant, whose trusses of yellow and scarlet flowers are produced from slender growths 18 inches high in July, should have sunny positions at the water's edge.

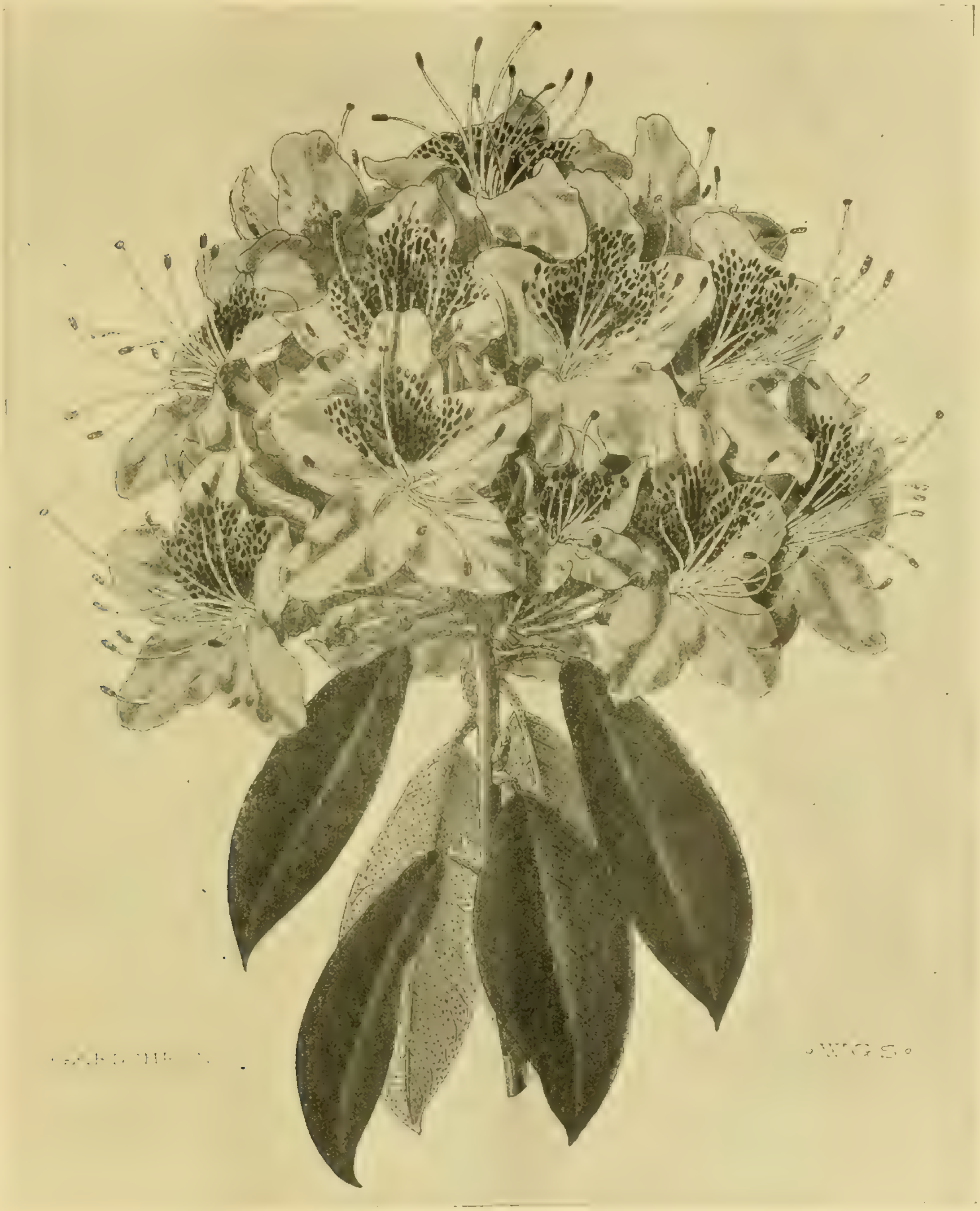

FIG. 161.—RHODODENDRON YUNNANENSE: FLOWERS WHITE WITH BLUSH TINGE, AND OF BLOOD-RED SPOTS.

(For text see page 398.

Numerous other plants will doubtless suggest themselves for positions of peculiar character, such as Lilium giganteum, Cypripedium spectabile, and others, Actæas, Gentiana asclepiadea, and G. pneumonanthe, Trilliums, and Orchis, but such plants can only be enjoyed at their full value when grown in an environment of tree and shrub, partly because it is their proper home, and partly because the water garden benefits by such an arrangement. The tendency of to-day is to collect water plants and find room for them, rather than to select water plants to occupy positions they would grace in their own inimitable way.

OTHER TYPES OF WATER GARDENS.

The open ditch, rock pool, and other kinds of water gardens, almost wholly artificial in their character, lend themselves to treatment that would enable one to grow many plants not recommended for the larger lakes, because here they are under better control, and make pretty patches of flower and foliage without the danger of getting out of hand. One can easily curtail them.

The open ditch is the next best site for a water garden, provided there is a persistent supply of water, however small, or a greater volume is obtainable intermittently, and that it is fully exposed to the sunshine. For tiny streams, the erection of dams is necessary—not the hideous structures of brick one so often sees, but dams of natural rock, arranged to form pockets in which plants could be grown that would hide or drape the structure. A naturally straight ditch could easily be diverted in places, so that a shape that may be described as irregularly serpentine is secured, not a formal outline, however, but with just sufficient bend in its course to show greater breadth of water in one place than in another. The narrowest part would be the best position for the dam, and if the ditch is lengthy, a series of dams may be erected that would give one plenty of variety in water surface. No serious difficulty need be experienced in making a broader expanse of water than the dammed-up ditch will afford. Two or three feet of water is all that is required and one can often do much with 4 or 6 inches of water, where the surface is broadest. A simple, but very effective dam that has proved rigid and as ornamental as such structures can be, is made with large boulders thrown together, faced flat on the side up stream and irregularly placed on the side down stream, a cutting across stream being made to allow of the larger boulders being bedded deeply into the banks and the bed of the ditch. A similar lot of boulders is placed with the irregular side up stream, leaving a foot or 18 inches of space between the two sets. This space is filled with "grouting," i.e., foundation materials mixed with cement, and a goodly recess in either bank filled with the same material to form a perfect cement wall enclosed with boulders. A few smaller boulders will finish the top in the most effective way, and these should be embedded in the cement wall before it sets. The water will, of course, need to be diverted whilst the dams are being built. Dams of this description, placed at intervals, will convert a narrow ditch into a series of ponds 20 feet wide if necessary, or into a broad watercourse, with small dripping pools or waterfalls, as may be desired. One can find in water gardens thus made positions for every small growing aquatic and marsh plant described previously, and, in addition, all the smaller Water Lilies of the odorata, caroliniana, Laydekeri, and pygmæa groups, and a host of small growing marsh and bog plants, such as Cypripediums, Trilliums, Primula japonica, Mimulus, Dodecatheons, Erythroniums, Mertensias, and others described as suitable for the rock pool. Any structure in connection with the water garden must be concealed, and there is ample material for this purpose in the Osmundas, Myosotis, Polygonums, Acorus, reeds and rushes, sedges, and grasses planted in the positions advised for them. The swift-running stream is very difficult to plant successfully. Small aquatics are uprooted, Nymphæas find the temperature of the water too cold for them, and none but the stronger reeds and rushes will be able to withstand the current. Generally, there is more charm in a rippling volume of water unplanted than when filled with common plants; one can, however, plant the banks in a most effective way, and induce such aquatics as Menyanthes and most of the Sagittarias to establish themselves wherever the water is shallow. Plant colonies always, and allow plenty of space between the groups, so that an uninterrupted view of the water is readily obtainable, and wherever there is a slightly shaded spot or raised grassy bank not wholly suitable for bog and marsh plants, introduce a collection of varietal sports of Aspidium angulare for their cool-looking, elegant fronds, choosing those whose growth is plumose and free. Anagallis tenella, the Bog Pimpernel, Parnassia palustris, Pinguiculas, and Gentiana acaulis, could readily be colonised in the short, wet turf close to the water's edge. *G. B. Mallett.*

(*To be continued.*)

BECKFORD HALL, GLOUCESTERSHIRE.

The gardens at Beckford Hall, the residence of Captain Case, J.P., are renowned for a walled-in fruit garden covered with wire netting, with a mesh small enough to exclude all sorts of birds except the tiny tit and wren, a well-cultivated and closely-cropped kitchen garden, smooth, velvety lawns, studded with choice Conifers, a large collection of well-grown Chrysanthemums, and nearly every inch of the mansion covered with choice climbers.

The whole of the east and part of the south wall in the fruit garden is furnished with Cordon Pears trained diagonally, containing about twenty of the best sorts in cultivation. In the collection we noticed that it included some of the earliest sorts to come into use, as well as the very latest, which prolong the Pear season to its utmost limit. The earliest to come into use are Souvenir du Congrès and Williams' Bon Chrétien, and the latest are Winter Nelis, in use from December to February; Nouvelle Fulvie, a January Pear; and Josephine de Malines, which we have seen in the fruit room in good condition during the month of April. Although Nouvelle Fulvie is a very late Pear, it is, notwithstanding, one of the best in the collection. The fruits are large, attractive in appearance, flesh melting, and very juicy.

The main walk in the kitchen garden is skirted with well-trained Espalier Apple Trees, including such sorts as Lady Sudeley, Allington Pippin, Duke of Devonshire, Cox's Orange Pippin, King of the Pippins, and many others. The garden is bounded on the south and east by substantial brick walls, which are furnished with Peaches, Apricots, and Plums; on the north by the Box avenue; and the west by Box hedges cut as square as if they had been set in a mould, about 2½ feet high and as much through, rising by square steps to 4 feet, all most trim and beautiful. The broad gravel path leading from the glasshouses to the pleasure grounds is bounded on each side by these trim Box hedges, which form a pleasing feature and give the garden a unique appearance. As we reach the pleasure ground, to the left is the Box avenue, 100 yards long: it has been planted for a very long period, and is still full of vigour. The Box trees on the south side adjoining the pleasure ground are cut into the shape of barrels 5 feet high, and form another striking feature in this department. On the lawn adjoining is the flower garden, properly laid out in geometrical beds, and all lavishly furnished with bright and beautiful plants and flowers.

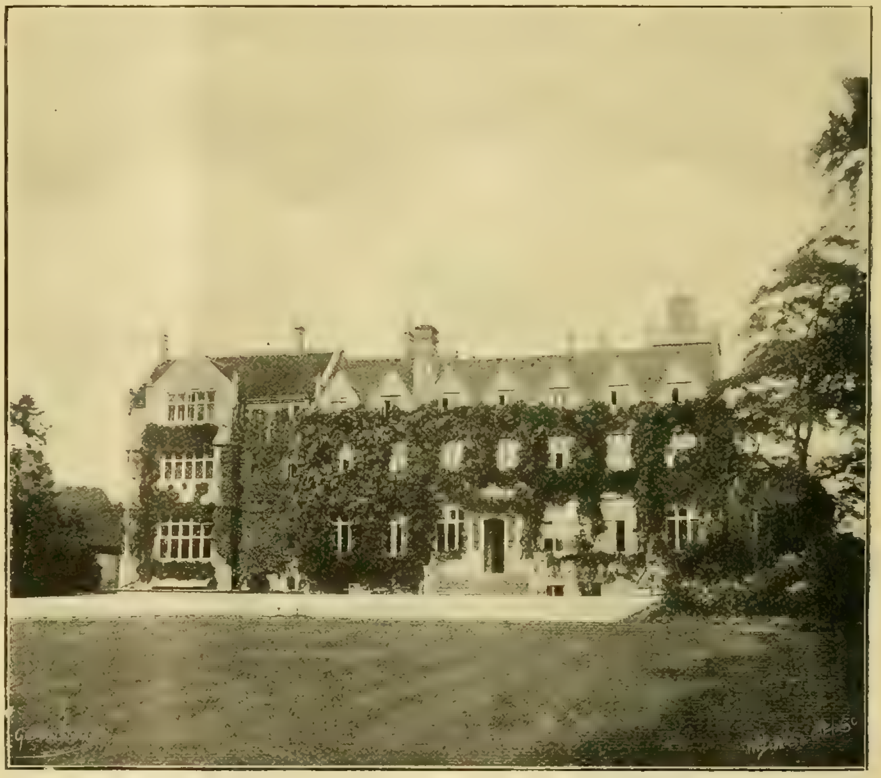

Fig. 162.—Beckford Hall: view of the west front.

Coming to the main walk, 300 yards long, and 10 feet wide, a portion of it near the flower beds is spanned with a strong iron trellis that is draped with most charming climbers, which, during their season of bloom, form a most attractive picture. These include Clematis montana, Japanese Honeysuckle, W. A. Richardson Rose, Banksian Rose, and Crimson Rambler. Near the mansion we noticed a ribbon border planted with Anemone japonica alba, Lobelia cardinalis, a plant too little grown, Salpiglossis, and Pelargoniums.

On the large lawn adjoining there are many fine Conifers, including such subjects as Sequoia sempervirens, S. gigantea, Pinus excelsa, Abies nobilis glauca, as well as Drooping Ash, Copper Beech, and many flowering trees and shrubs such as Cercis siliquastrum, commonly known as the Judas Tree, with its handsome, smooth, kidney-shaped leaves and rosy-purple flowers, produced in great abundance; Genista Andreana, one of the most beautiful of all hardy plants, with its profusion of yellow flowers and rich crimson markings; Choisya ternata, the Mexican Orange Blossom, with its numerous white flowers, etc.

A special feature of this part of the lawn consists of some Yew hedges, about 10 feet high, cut perfectly square; there is an opening in the centre, and over this a slanting cut roof similar to the roof of a house, 15 feet high, and the hedge 6 feet through.

Passing on to the spacious lawn on the west side of the mansion, there are beds of choice shrubs interspersed with flowering plants, and bordered with broad edgings of Violas of the best, free flowering varieties. A large bed of Gorse is a mass of shining gold during the spring season; a large bed of Cotoneaster microphylla formed a striking contrast, while the banks of a sheet of water close at hand were all aglow with fine clumps of Tritoma uvaria. A long vista cut through the trees afforded pleasing views of the country in the distance many miles away. Turning to the right, we come on to the Monk's Well, surrounded by a close-cut Box hedge: this was a spot of great interest many generations ago.

The whole of the mansion is draped with charming climbers in perfect keeping—Banksian Roses (white and yellow), Ampelopsis, Wistarias, Magnolias, Jasminums, Pyrus japonica, and Cratægus pyracantha, all growing in the greatest luxuriance and the utmost profusion, producing a scene of great beauty.

The plant houses contained Pelargoniums, Ferns, Crotons, Begonias, Dracænas, Allamandas, etc. Vines, Tomatos, and other crops are cultivated in the fruit houses.

Mr. Farmer, the gardener, may be congratulated upon his work, for everything bore evidence of skilful care, and perfect order prevailed everywhere. *Q. R.*

BALANCED RATIONS FOR PLANTS.

CONSIDERABLE attention has of late years been given by agricultural chemists to the problem of balanced rations for plants.

All gardeners know that there are great differences in the character of the soil they have to cultivate. There are soils which are highly productive and soils that are very low in productive capacity. This is obvious to all who have anything to do with soils, and one of the great problems is to find out what kind of treatment is required for this or for that soil in order to give plants a balanced ration, because it is just as necessary for plants to have a balanced ration to live upon as it is for animals.

Plants require certain elements of food to live upon, and without them it is impossible to make them grow. If gardeners try to grow plants without any nitrogen the seeds will germinate, but that is all; then if nitrogen be applied and phosphates left out, the same result will be obtained, and the plants make no growth; it is the same with potash, and also with lime. These four elements are absolutely essential to satisfactory plant-life. This has been very strikingly demonstrated in some water cultures with plants, at Rothamsted, during the season of 1905.

Other constituents are to be found in soils, but experiments have proved that all fertile soils contain an abundance of all the elements except four: nitrogen, potash, phosphoric acid, and lime. The gardener should, therefore, try to balance the application of plant-food according to what is already present in the soil he has to do with.

The following table shows four types of soil that the gardener may have to deal with :—

Selected chemical constituents in different descriptions of soil. Quantities in 100 pounds of each, dry.

	Ordinary Average Loam.	Rich Garden Soil.	Rich Pasture Soil.	Leaf Mould.
	Per Cent.	Per Cent	Per Cent.	Per Cent.
Organic Matter ...	3·84	8·46	14 55	17·00
Nitrogen	0·13	0·45	0·59	0 47
Potash	0 20	0·73	0 75	0 50
Lime	0·66	2·08	1·20	0·18
Phosphoric Acid..	0·12	0·10	1·00	0·13

A sample of ordinary loam is seen to contain about 3·84 per cent. of organic matter, known to the gardener as humus, 0·13 per cent. of nitrogen, 0·2 per cent. of potash, 0·66 per cent. of lime and 0·12 per cent. of phosphoric acid.

The rich garden soil with its greater accumulation of humus matter contains more than three times as much nitrogen and potash, but rather less of phosphoric acid; while the exceedingly large proportion of lime—over 2 per cent.—would very materially assist in the active nitrification of the larger percentage of organic matter. In fact, it is now known that the presence of lime in a soil, especially when associated with humus, much increases the availability both of potash and of phosphoric acid, so that smaller quantities of these ingredients suffice when extra lime is present.

The rich pasture soil, in consequence of its extensive amount of grass-root fibres, contains in the sample quoted 14½ per cent. of organic matter, with 0·59 per cent. of nitrogen, which would mean 13,275 lbs. per acre of nitrogen if the soil was cut to 9 inches deep. Much more of potash and about 22,500 lbs. each of lime and phosphoric acid in an acre of soil if taken to 9 inches deep. The leaf mould contains 17 per cent. of organic matter, with nearly half of 1 per cent. of nitrogen, a good quantity of potash, only a small amount of lime, and about a normal quantity of phosphoric acid.

Speaking generally, we may say there are six factors which have to do with plant crop production. Some of these factors can be controlled and some of them cannot.

SEED AND SOIL.

The first factor in growing crops is undoubtedly the seed, and all gardeners know that there are good seeds and poor seeds; seeds which are capable of making a very much larger return than others. Another factor may be termed the home for the plant. Plants must have a place to live in independently of everything else; they must have a place which they occupy, and, of course, that is the soil. The soil may have plant-food in it or it may not, but the plant must have a home. The bulk of the soil, therefore, serves chiefly as a support to the growing crops and as a sponge to hold water for their use. Consequently, the suitability of the soil as a good home for the plant or not depends upon whether it is loose and porous and cultivatable, and upon whether it affords a satisfactory deep place for the roots. If the texture of the soil is as it should be, then it is loose, porous, and absorbs moisture, and there is plenty of organic matter (humus) in it, and its drainage is good, so that it does not contain too much water. Such a soil, we say, is a good home for garden plants. *J. J. Willis, Harpenden.*

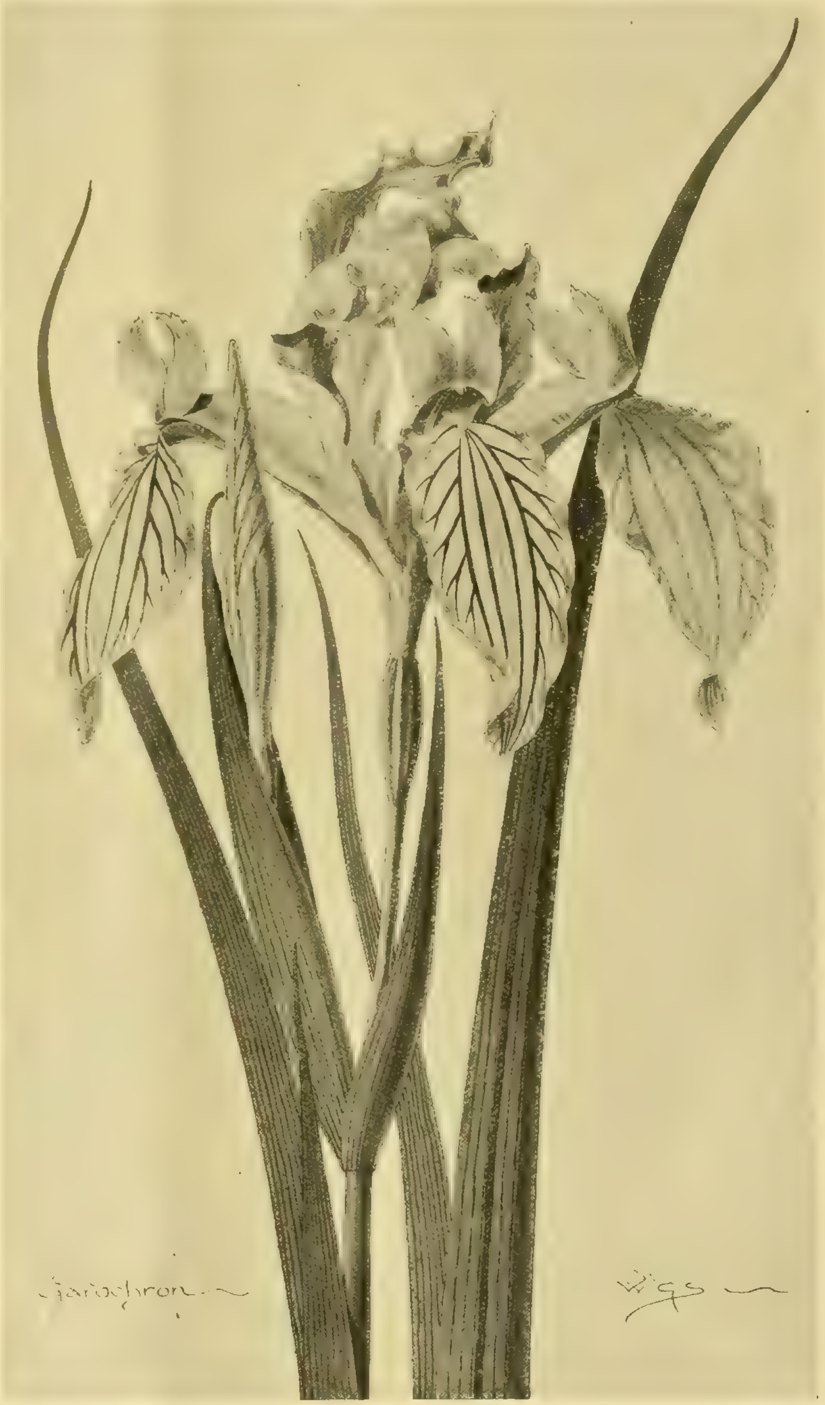

FIG. 163.—IRIS BRACTEATA: COLOUR OF FLOWERS YELLOW, VEINED WITH LILAC.

IRIS BRACTEATA.

OUR illustration was taken from a plant exhibited lately, at the Royal Horticultural Society by Mr. Reuthe, of Keston, Kent. It is a Californian species with yellow flowers, and is reputed to be difficult to grow. A full description of the plant is given in Mr. Lynch's *Book of the Iris*, p. 69. The "falls" are yellow, veined with lilac.

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from page 342.)

SUNGPAN AND THE KUNGALA PASS.

The Quest of Meconopsis punicea.

In previous "leaves" I have described my journey in what is practically a straight line from Ichang to the Yalung river, in Eastern Tibet—a distance of some 1,200 miles. In order to complete the stretch of my travels as indicated in the map published in the *Gardeners' Chronicle*, August 26, 1905, supplement, it is necessary in this, the concluding "leaf," to say something about the trip to the north-west frontier of Szechuan, in search of Meconopsis punicea.

Leaving Tatien-lu on July 23, 1903, and travelling by way of Yachow, Chentu, Kuan Hsien, and the Min Valley, I reached the town of Sungpan at noon on August 27—a journey of over 550 miles. I will not enter into any details of the journey. It was harder than anything I had before experienced. I was well-nigh exhausted in body, and almost in spirit, long ere the weary tramp was ended. At Tatien-lu I suffered from mountain-sickness and other maladies, and one or two days on the way I had to lay up, but large doses of opium eventually cured me. When I left Kiating, on June 25, for Tatien-lu I weighed 11st. 4lb., on arrival at Sungpan I was barely 8st. 6lb. I mention this personal detail merely to show how trying and exhausting the journey proved.

Sungpan, long. about 103° 12′ E., lat. 31° 15′ N., alt. 9,470 feet, is situated in the extreme north-west corner of Szechuan, and is the furthermost outpost of Chinese civilisation in this direction. To the immediate west and north-west the country is peopled with Sifans and various independent and quasi-independent tribes, about whom little or nothing is known. Speaking broadly, the Min river from Kuan Hsien to Sungpan may be taken as the real boundary between China and the nondescript country of Eastern Tibet.

The town of Sungpan is built in a narrow, highly-cultivated valley, through which the infant Min winds its circuitous course. The town is walled in by treeless mountains, which rise 1,000 to 2,000 feet above the town. On the west side, Sungpan is backed by a steep mountain, up two sides of which the city wall is carried. The western gate is situated at the top of this mountain, and is exactly 1,000 feet above the river. Save for the Prefect's Yamên and a temple or two the whole of the mountain enclosed within the city wall is given over to terraced cultivation.

Sungpan is a town of the fourth class (styled "Ting"), but the head civil official has the local rank of Prefect, his full title being "Fu-I-Li-Min Fu," which signifies "The barbarian-cherishing Chinese-governing Prefect." This fanciful title has reference to the official's control over the neighbouring tribes-folk—a control which is purely nominal, not to say imaginary. At the time of my visit in 1903 (and again in 1904), the Prefect was a most courteous and obliging official. If for nothing else, I shall always remember Sungpan for the extreme courtesy and valuable, but unostentatious, assistance rendered to me by the officials there. Many hard things have been written and said about Chinese officials, and it is pleasant to be able to say something on the other side. During the whole of my five years in China I always received proper attention and assistance when required from the Chinese officials.

The Manufacture of Tea.

Sungpan is a thriving trade entrepôt boasting a population of about 10,000; four-fifths of which are Mohammedans. The trade between Sungpan and the tribes-folk is one of barter, in which Tea is the important medium. The Tea is grown on the mountains around Shi-ts'üan Hsien, and in the Min Valley between Weichou and Kuan Hsien. In one village I was fortunate enough to witness the process of preparing this Tea for the Sungpan market. The bushes of Camellia Thea are allowed to attain a height of 3 to 4 feet. They are then cut down to the ground, tied in bundles, and dried in the sun. When properly dry these bundles are brought into the villages and cut into 1 to 2 inch lengths by means of a large knife fixed in a block. These "lengths" of twigs and leaves are next steamed over a fire ("to bring out the aroma," as I was laughingly told), and packed under pressure into oval or rectangular bales of 80lb. or 160lb. respectively. This is all the preparation the Tea undergoes for the Sungpan market. No attempt at picking over the bundles is made, and weeds of all sorts growing with the bushes are dried and cut up with them. The mode of preparation is infinitely more simple and the quality vastly inferior to that prepared for the Tatien-lu market. In exchange for this Tea the tribes-folk bring in wool, skins, musk, deer horns and medicines. The only foreign articles I saw on sale in the town were German needles!

The villages and farmhouses around Sungpan are tenanted by Sifans, or Chinese who have married Sifan women. These Sifans are Tibetans pure and simple, and their language is identical with that of the Tibetans around Tatien-lu. No Europeans or foreigners of any kind live in Sungpan or the neighbourhood. Some years ago a Protestant Mission Station was opened here, but the unfortunate missionaries got rioted out and severely maltreated. Since then no serious attempt to renew the venture has been made.

The climate of the district is very healthy, but extremely cold in winter. The Chinese wear fur-lined clothes all the year round.

From the point of view of food supply, Sungpan proved a land of plenty—delicious beef and mutton were always obtainable. The Irish Potato was commonly cultivated and possessed, the finest in flavour of any I ate in China. Of vegetables other than Potatos, Sungpan boasted Peas, Beans, Carrots, Celery, Turnips, Chillies, Cabbage, Onions, and Garlic. Of fruits there were Apples, Pears, Plums, Apricots and Raspberries (Rubus xanthocarpus). Wheat (bearded and plain), Barley (white and purple) were the chief crops. The valleys and mountain-sides up to 11,500 feet were mainly given over to the cultivation of these two cereals. In late August and September the neighbourhood of Sungpan, as far as the eye could range, was golden with fields of rolling Grain. Oats, Flax, and Opium, in small quantities, were other crops cultivated.

The name "Sungpan" has reference to forests of Pine and the circuitous course of the river Min. The river still pursues its winding course, but the forests have long since disappeared. It is only in the Temple grounds and amongst tombs that any trees remain. The mountains are absolutely treeless, and, where not under cultivation, covered with dense scrub and long grass. The outer crust of the mountains is composed of rich, flaky loam (loess?), rather heavy, but the finest possible for Wheat and Barley culture.

The Vegetation of the District.

Our knowledge of the flora, like our knowledge of the Sungpan neighbourhood generally, is meagre in the extreme. Only the Russian traveller, G. N. Potanin and his companion, M. M. Berezovski, had collected plants in this neighbourhood previous to my visit. My own collections were made in the autumn, and are in consequence small and imperfect. Leaving aside for the moment the uplands, the following were the more noteworthy plants noted in the immediate vicinity of the town:—Senecio tanguticus, Salvia, Przewalskii, Nepeta Wilsoni, Aconitum gymnandrum, Delphinium Pylzowii, Corydalis spp., Scabiosa, Bretschneideri, Gentiana spp., Senecio spp., Clematis tangutica, Clematis orientalis var. akebioides, Lonicera tibetica with pink flowers and bright red fruits, various Compositæ, and Labiatæ. A blush-coloured form of Anemone japonica was very striking, but the commonest plant of all was a species of Erigeron with white pink and pale purple flowers. In fruit and very abundant were Rosa spp., Spiræa spp., including S. sorbifolia, Pæonia anomala, Hippophae rhamnoides, Ribes Grossularia, and many species of Berberis. The only trees noted were Populus euphratica, P. tremula var. (?), Salix alba, and two species of Picea.

Two days were spent in investigating the mountains in the immediate neighbourhood of the town of Sungpan, but not a sign of of the Meconopsis could I discover. The altitude was not sufficiently great, so that I was not altogether surprised. The people professed utter ignorance of any such plant, but, whilst discouraging, this proved nothing, and I had travelled too far to be lightly turned back. After much enquiry, I gleaned that the Kungala or Kung-lung Pass, some 30 miles to the north-east, on the old military road to Nan-p'ing and Kansu, was a likely spot. (I need not have travelled so far, for the following year I found the plant in abundance on a pass only 10 miles to the east-north-east of the town! However, it is always easy to be wise after the event.)

My arrangements were speedily made, and at 8 15 on the morning of August 30, escorted by five mounted soldiers, I left Sungpan by the north gate. 'Twas a glorious autumn day, and everyone of us were in high spirits. If my followers could not share my enthusiasm and anxious expectancy, it cannot be said that they did not loyally render every assistance. The miles were long, but we trudged on gaily. We were a happy crowd—Chinese, Sifan, half-castes, and one solitary Britisher. At 1.45 we reached the tiny walled village of Djanlo, 12 miles from Sungpan, and lunched there. Formerly Djanlo was a most important military post, but, now, only a few soldiers are stationed here. Much of the land inside and outside the walls was given over to Opium cultivation, and I never saw finer capsules. The people were busy incising the capsules and collecting the exuded latex. I noted that the incisions were made in a *circular* direction, not longitudinally as in other parts of Szechuan.

Leaving Djanlo at 2.30 p.m., we reached the Sifan hamlet of Pei-mu Chiao (alt. 10,000 feet), 20 miles from Sungpan, at 6 o'clock. We found lodgings for the night in a house where two large wood fires were burning and no outlet but the door for the pungent smoke. This smoke punished my eyes severely, and at times I thought I should be suffocated. Not so my followers—they did not mind it in the least!

From Sungpan to Pei-mu Chiao the road winds through a succession of fertile valleys, and the thousands of acres of Wheat and Barley just ready for the sickle presented a scene fair to look upon. Dotted here and there were Sifan hamlets and farmsteads, with their poles of prayer-flags waving in the breeze. There is something pretty and unselfish in the idea of these prayer-flags, for the winds which move these bits of rag waft blessings on all and sundry. The valleys were alive with Sifans harvesting their crops; all were laughing and singing like the happy simple children of nature they really are. The chant of these Sifans is by no means unmusical, and the notes rise and fall in soft rhythmic cadence. They were all very timid, and, unless in numbers, gave us a wide berth, rushing helter-skelter away from the road. But occasionally a whole village turned out to witness the unwonted sight of a foreigner. They laughed and chatted amongst themselves, and were evidently amused at my appearance. I noticed that nearly all were goitrous. The women wear their hair in a series of tiny fringe-plats in front and one large plat behind. These plats are ornamented with coral, turquoise and bone beads, and the large one is wound around the head with a kind of turban. In spite of their unpleasant odour, which is akin to that of a keg of rancid butter, there is something pleasing and picturesque about these folk, and their simple manners have a peculiar charm.

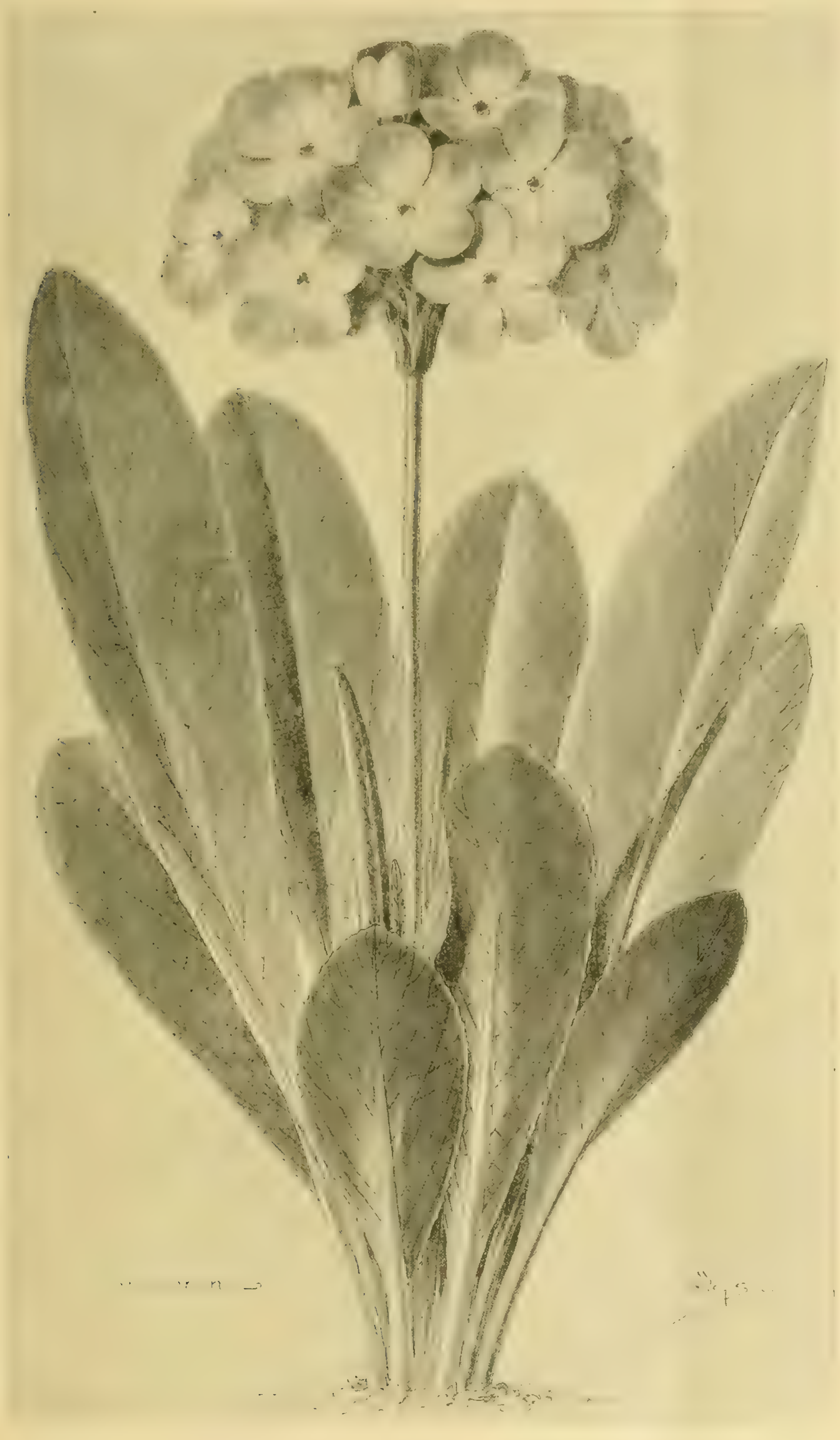

Fig. 164. PRIMULA ORBICULARIS: FLOWERS, YELLOW.

The roadsides were fenced with hedges of wild Gooseberry, various species of Berberis, Spiræa, Salix, and Lonicera tibetica. Over the hedges trailed Clematis tangutica, a wealth of yellow and bronze. Salvia Przewalskii, with its large violet-purple flowers, was everywhere abundant. Flax and Peas were common crops. Purple Barley and Oats reached up to the limits of cultivation, which was, roughly, about 11,000 feet.

Patches of forest composed of two species of Picea, a lofty Juniper and a handsome Birch, were frequent on the steeper mountain sides. Facing our lodgings was a nice piece of forest, but axe and fire were playing sad havoc with it. The infant Min meanders through the valley—a broad but shallow stream of clear limpid water.

We were up betimes next morning, and there was a very decided autumnal nip in the air when we set out just as day was breaking. It was very foggy, but later the sun came out and we enjoyed a perfect day.

The Kungala Pass is some 10 miles from Peimu Chiao, and I decided to attempt the round trip in the day. This, as subsequent events proved, was unwise. Once clear of our lodgings cultivation was left behind, and not another house was seen until we reached the hostel just below the head of the pass. The road was the merest track, often overgrown with long grass and herbs and difficult to follow. The country was quite deserted, and we only saw a couple of folk the whole of the day.

Our road at first followed the Min, and wound through a broad valley flanked, on either side, by high mountains, whose upper parts were bare, barren, and uninviting. The lower parts were clothed with coniferous forests, which occasionally reach down to the river's edge. Two species of Picea and a Juniper—all three handsome trees—were the sole constituents of these forests. The limit of trees was about 12,000 feet. Near the bed of the river small trees of Birch occurred. In the distance, to our right, towered a range of vicious-looking peaks, barren and flecked here and there with snow.

The ascent was of the easiest; indeed, save in those places where lateral streams had to be crossed, one imagined the road was level. However, the aneroid showed an ascent of 1,500 feet in the 10 miles. The soil is gravelly, and the streams have cut deep, broad channels. The main stream received many torrents, and eventually went off towards the range on our right, from whence it takes its rise. We followed a tributary branch which lost itself in the bogs and moorland near the head of the pass.

Where free of forest, as it mostly is, the valley is covered with a dense, low scrub composed almost entirely of Potentilla fruticosa, Daphne sp., Berberis integerrima, B. brachypoda, B. diaphana, Lonicera tibetica, L. hispida, Hippophae rhamnoides, Caragana sp., Astragalus spp., Clematis tangutica, Salix spp., Spiræa lævigata, and another species. The Spiræas form fully 50 per cent. of the whole scrub. These heaths merge into grassland, which extends in a north-westerly direction for hundreds of miles into the Amdo country. These undulating prairies (Chinese Tsao-ti) support vast flocks of sheep and herds of yak, and are peopled with nomadic Tibetan tribes. It is from these regions that Sungpan obtains its wool, furs, and medicines. The grass and bog-lands around the head of the pass were gay with herbs; blue and yellow were the predominating colours. Various species of Senecio, Saxifraga diversifolia, and another species, Hypericum sp., and various Composites supplied the yellow. Several species of Gentiana and the dwarf Delphinium Souliei supplied the blue. Acres upon acres were alternate carpets of blue and yellow. *E. H. Wilson.*

(To be concluded.)

PRIMULA ORBICULARIS.

In our number for May 12 last, Mr. Hemsley described a new species of Primula under the above name. Messrs. Veitch now afford us the opportunity of figuring the plant, which with its large fragrant, pale yellow flowers is a great acquisition. Seeds were sent home from Western China by Mr. E. H. Wilson. For further details we may refer to the article above cited.

ORCHID NOTES AND GLEANINGS.

THE COMPLETION OF THE FLORA BRASILIENSIS.

In this part (the 129th) Professor Alfred Cogniaux continues the enumeration of the species of the genus Oncidium partly dealt with in the former Fascicle, the number of Brazilian species enumerated being 131. Then follow Leiochilus, two species, the second, Leiochilus pulchellus Cogn., being removed from Waluewa pulchella Regel, a rare and pretty species noted in the *Gardeners' Chronicle*, November 23, 1901, as being in the collection of Frau Ida Brandt, at Zurich. Lockhartia, six species; Sigmatostalix, three species. Huntleyinae Pfitzer includes Promenæa, eight species, all well known, except P. ovatiloba Cogn.; Warszewiczella, four species; Bollea, one; Huntleya, two species. The other genera dealt with are Cheiradenia, Chaubardia, Dichaea, 22 species, divided by the author into four sections, viz., Eudichaea O. Kuntze, Dichaeastrum Cogn., Dichaeopsis O. Kuntze, and Pseudodichaea Cogn. In Tribus XXII. Sarcanthinae Pfitzer are enumerated 24 species of Campylocentrum, those singular little plants which in South America represent the Africa Angrœcums and Æranthus, under which names the Campylocentrums were formerly placed, until, in the *Orchid Review*, August, 1903, Mr. Rolfe enumerated the species under Campylocentrum. A list of Addenda et Emendanda includes descriptions of many new species, Habenaria, Pogonia, Vanilla, Stenorrhynchus, Spiranthes, Physurus, Prescottia, Microstylis, Galeandra, Masdevallia, Stelis, Pleurothallis, and Restrepia being among the genera.

The index to Vol. III., Part VI., is given in the present issue, and very carefully executed illustrations of many of the species described. Professor Cogniaux must be complimented on the patient and accurate manner in which he has dealt with the Brazilian Orchids, the true value of his efforts being even more evident in the present than in former Fascicles, as he is the author of many of the species described. Kochiophyton negrense, Schlechter is a strong species, bearing a general resemblance to Aganisia cœrulea. As we have already pointed out, the publication of this part brings this monumental work, commenced as long ago as 1829, to a most satisfactory completion.

PLANT PORTRAITS.

Maxillaria præstans, Rchb. f.—M. Kimballiana, hort., *Oesterreichische Garten Zeitung*, June.

Rose, Van Houtte.—H. P. crimson, *Rosen Zeitung*, May.

Rhododendron. — Pink Pearl, *Revue de l'Horticulture Belge*, June.

Rose, "Les Rosati." A seedling out of a hybrid perpetual, by pollen of Persian yellow; flowers carmine, base of petals yellow, *Revue Horticole*, June.

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Miltonia vexillaria and its varieties.—Plants that have passed out of bloom should be placed in the coolest part of the intermediate house, or in a light position in the Odontoglossum house, and be exposed to as much fresh air as the other occupants. Nothing should be done at present to induce growth, because the longer the plants remain dormant, the stronger will be the new "breaks" when the season of activity recommences. Where many of this Miltonia are cultivated some of the plants commence growing almost immediately after the spikes are removed, but the cooler atmosphere of the Odontoglossum house will usefully retard them. Very little water will be necessary to keep the pseudo-bulbs and foliage plump and healthy till it is again necessary to return them to their growing quarters in the Cattleya house. The distinct hybrid M. Bleuana and its variety nobilior should be kept in the intermediate house. The new growths are now making considerable progress, and these should be constantly examined for thrip insects, which greatly disfigure and injure them.

Thunias.—All of the Thunias as T. Marshallii, T. Bensonæ, T. Veitchiana, T. Brymeriana, &c., as they pass out of bloom should be placed in a cool, well-ventilated greenhouse, where they may receive uninterrupted sunlight. Any of these plants that have failed to bloom, and are growing to an unreasonable length, should be treated in the same way as those that have flowered; previous to their removal to a cooler atmosphere it is advisable to pull out the centre leaves at the apex of the stems, which will stop further growth, and allow the plants to commence their period of rest at the proper time. So long as the leaves remain fresh and green the plants may be moderately supplied with water, but immediately they commence to change colour it should be gradually withheld. Should the leaves become infested with thrips or red spider, lay the plants down on their sides and syringe them with warm rain-water and soft soap, and when the foliage has again become dry return the plants to their former positions on the stage. Thunias may be readily increased by taking off the back pseudo-bulbs at this season, cutting them off at the joints into lengths of about 6 inches, and inserting them firmly as cuttings into small well-drained pots, in a mixture of chopped sphagnum-moss, a little leaf soil, and course silver sand. Stand the pots in the warmest house, and when the young shoots appear let the plants grow as quickly as possible. On the completion of growth rest them as advised for the older examples.

Odontoglossums.—In the intermediate house such plants as Odontoglossum grande, O. Schlieperianum, O. Insleayi, and its superior variety leopardinum are now starting to grow, and should be repotted if this is required. Last year our plants were potted into a mixture of peat, leaf-soil, and sphagnum-moss in equal parts, a few pieces of fern rhizome being placed over the bottom of the pot for drainage. The plants were potted in a similar way to an ordinary greenhouse plant, with a thin surface of moss packed firmly over the compost. This season on removing the surface moss I found the soil in good condition and the roots plentiful, the plants, therefore, requiring only a fresh covering with sphagnum-moss. At all times these plants require very careful watering, for if the soil is made too wet the fleshy roots are liable to decay. As the young growths push up and the leaves expand, allow no water to remain in the centre of the growths or they will probably damp off.

Temperatures at night.—Owing to the cold nights lately experienced it has been necessary to use a considerable amount of fire heat in the Cattleya and other warm divisions. The atmospheric temperature of the East Indian house should be 70°, that of the Cattleya 65°, intermediate house 60°, and Odontoglossum house a trifle over 50° through the night.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Ferns on Walls.—One frequently notices enquiries as to the best plants that will thrive on shady walls in the greenhouse or conservatory. Unsightly walls in a plant-house can often be made interesting objects by planting them with a suitable collection of Ferns. There are but few climbing plants that will succeed satisfactorily for any great length of time on a back wall, especially if they are overhung with other creepers from the roof, but there are some few exceptions. Asparagus plumosus is well suited for this purpose if planted in a well-prepared border in a house having an intermediate temperature; while Ficus repens grows well in a cool house, but its roots should be confined to a limited border space, otherwise it will develop into the arborescent form and lose its close clinging character. The walls can be covered with virgin cork, and, previous to arranging it, the kinds of Ferns intended to grow should be decided upon, so as to make adequate provision for their continued growth by making pockets to suit the different varieties. Sphagnum-moss can be used to fill up the spaces between the cork, and this substance will materially benefit the Ferns owing to its property of retaining moisture. Davallias are most suitable subjects for this kind of wall gardening, and they are never more at home than when they are growing on rockwork or on corked walls. In selecting the varieties for planting, the minimum temperature maintained in the house must be taken into consideration, as many species of Davallia will not thrive in a cold house, although most of the greenhouse species luxuriate in a warm house. Providing the temperature does not fall below 40° in the winter, the following varieties will thrive on walls: Davallia dissecta elegans, D. bullata, D. canariensis, D. Tyermanni, and D. Novæ-Zealandiæ. Davallia dissecta is the best species for covering the wall quickly. D. bullata, from its deciduous habit, should be used sparingly. Many of the Adiantums may also be used, and A. assimile is one of the best for this mode of culture, while A. gracillimum is seen at its best when growing over the edges of wall pockets.

General remarks.—Remove as they appear the flowers from Mignonette growing in pots, and keep the growths regulated at a sufficient distance apart. Give abundance of air to the plants by removing the lights from the frames during the day, and afford a sufficient quantity of water to the plants when they require it, with frequent syringings overhead. Soot water may be given, but avoid strong stimulants; when the pots are full of roots a little artificial manure may with advantage be used. Lose no time in re-potting late rooted plants of Begonia Gloire de Lorraine, otherwise the foliage will assume a sickly appearance. Plants of Gloxinias which have now passed out of flower, and which are intended to do duty for another year, should be placed in cool pits close to the glass, and be encouraged to complete their growth and to form strong corms. Seeds of Campanula pyramidalis should be sown in pans or boxes, and the seedlings be raised in a frame, and when large enough be potted singly. Encourage, by liberal feeding, Campanulas now coming into flower. Maintain a growing atmosphere in the stove-house by closing the structure early, which will also economise fuel.

THE APIARY.

By Chloris.

Some things to avoid.—I have visited an apiary of eleven hives and was astonished to see at least half a pint of bees either dead or dying in front of each hive. In addition to this, the whole colony was in an uproar. On enquiring the cause, I found the beekeeper had been advised to discard queen excluder zinc below his shallow frames. His disappointment can be more easily imagined than described when he found on examination that a portion of over fifty frames contained brood. To remedy this he had cut out all the brood, and some honey of course, leaving it on the hive roofs to be cleaned out by the bees. When the bees had completed their task of cleaning up, they set to work to rob any and every hive. Every beekeeper ought to exercise great care with his comb, for, once the bees have found that honey can be obtained easily and without labour, they seem as though they cannot resume honest labour again. I visited a second apiary later, and was asked to overhaul the hives. I was amazed to see how badly they were quilted. Sacks had been used, but they did not fill the corners. This was quickly remedied and a sheet of brown paper placed between the quilts. I left the beekeeper giving him the first piece of advice I received as beginner, viz., "Never be afraid of putting on too much. What will keep the heat in, will keep it out."

Something to imitate.—In the former apiary I saw a very good home-made solar wax extractor. It consisted of a box, such as drapers send when delicate material is despatched. It was about 30 inches long, 15 inches broad, and 4 inches deep. A sheet of tin was fitted in, being bent up at the sides and one end. On the upper end of the tin, for the box was tilted towards the sun, the comb to be melted was placed, and melted wax ran to the lower end. Over the box was a sheet of glass. When I saw how efficiently this simple contrivance was doing its work, I compared it with the messy way many of us adopt, and thought what a lot of domestic discomfort might be saved by this very simple method.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Strawberries.—Where such useful varieties as British Queen, President, and Monarch are grown, they will serve to keep up the supply of fruit until the outside crop commences to ripen. The plants of the varieties mentioned will by this time have set an abundance of fruit, and this should be thinned out at once, so that those which are left may have a better chance to swell to a good size. They will now require watering twice daily, and the afternoon watering should be with diluted liquid manure, which may be applied until the fruits begin to colour. It will be somewhat difficult now to keep red-spider from attacking the plants, and the only remedy is to syringe the plants twice each day, getting well under the leaves. If it is convenient, let the plants be arranged on shelves where they will not be subjected to the full power of the sun's rays.

Strawberry Layers.—If the first batch of runners has not yet been layered, let this work be completed at once, for much will depend on an early start being made, so that the plants may be potted into their fruiting pots in good time. Some growers layer direct into 5-inch pots, which is not a bad practice for the early plants, providing there is not a continuous spell of wet weather, which would tend to sour the soil. In the latter event the young plants would not thrive so well as if they had been layered into 3-inch pots and potted on afterwards. The soil most suitable for use at layering time is one consisting of good loam, enriched with manure from a spent Mushroom bed, and a little bone-meal. No crocks need be used for the 3-inch pots. Secure the layers with wire pegs, and get as many layers as possible together, which will save time in watering them. Plunge the pots a little into the ground, as this will help to keep the soil more uniformly moist, but they will require to be watered.

Peaches and Nectarines.—When the fruit has been gathered from early trees let all the weak and old wood be cut out of them, so that the fruit-bearing growths for another season may have the full benefit of light, air, and sun. Continue to syringe the trees and keep the borders in a moist condition.

Madresfield Court Grapes.—Where this splendid Grape is accomplishing its last swelling, or approaching the ripening stage, the vines must not be allowed to become at all dry at the roots, for if allowed to get dry and a soaking of water be afterwards applied, the berries will crack badly. The lateral growths may be allowed to grow a little more freely without stopping. Afford ventilation early in the morning, and employ abundance on very hot days.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Sowing Seeds of Herbaceous Plants.—Many gardeners prefer the present time, rather than earlier in the season, for sowing the seeds of their perennial herbaceous plants. When these are sown in beds fairly well shaded from the mid-day sun, it is quite probable that in most places better plants will be produced because of the fact that the seedlings will have more attention paid to them than would be the case if they came up at an earlier and busier season.

Michauxia campanuloides, a lovely plant of the Bell-flower family, is one that should be grown by all lovers of hardy flowers. In height it attains from 4 to 6 feet, and the flowers are white, tinged with purple, and arranged in a pyramidal candelabra-like head, which gives it a very imposing appearance, and makes it most effective for planting in mixed borders. It is a perennial plant, but perhaps the best results are obtained by treating it as a biennial. If the seeds are sown in a box, and the seedlings, when large enough, are potted up into small pots, the plants ought to be ready to put into their places in the border by the autumn for flowering next season.

Aquilegias are beautiful plants, both in flower and foliage, in borders of herbaceous plants at this time of the year. Not only as decorative plants in the border are they to be admired, but for cutting they are most useful, and should be grown extensively in the reserve garden for that purpose. Though the rarer species are somewhat difficult to get, and require to be propagated almost annually from seed, the lovely varieties and hybrid forms of the common Columbine are particularly easy of cultivation. So free and hardy are they that they are eminently adapted for growing in the wild parts of the flower garden, either by the streamlet or on slopes in the grass along with other naturalised subjects, such as Foxgloves, Anchusas, and Camassias. The seed may be either sown in the spots where the plants are to flower, or on prepared seed beds, where, after thinning out the seedlings properly, they may be left until next spring, when they can be transplanted to the positions assigned to them.

Primulas.—Many of the Alpine Primulas, such as P. denticulata, P. d. var. cashmeriana and P. cortusoides, if now sown in pans, and the young seedlings grown on in pots, will make nice plants for putting out in the rock garden next spring.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Late Peas.—Except in very warm districts it is not advisable to sow for the latest supply after this date, and even at this time of sowing I strongly advise the use of early or second early varieties, and the avoidance of the later sorts, such as Autocrat, Late Queen, etc. Amongst the varieties to sow now is the well-known Early Giant, certainly one of the best kinds at any season. It grows about 3½ feet high, and should be sown at this distance between the lines. If the soil is dry, afford a good watering before covering the seeds. Green Gem, growing about 12 to 15 inches high, is an excellent variety for sowing closely together on a border. Dwarf varieties, growing about the height mentioned, are so easily protected in the event of early frosts that they should not be omitted to be grown.

Carrots.—Make another sowing of one of the early Horn varieties for the purpose of supplying young roots in late autumn and early winter. Some rough leaves or straw thrown over them will afford sufficient protection from early frosts. Look to the main general crop, and if any blank spaces occur in the rows, sow the vacancies with seeds of Early Gem, as by this means good use will be made of the space, and the general crop will present a better appearance. The same remark applies to Beetroot, of which the variety, The Globe, should be sown to make good any losses. Keep the soil moderately loose between these root crops to allow freedom of growth. A sowing of soot on the Carrot crop will prove profitable if applied during showery weather.

Outdoor Tomatos.—Keep these rigidly trained to one stem, and, when three or four trusses of blossoms have formed, pinch out the leader, for it is seldom that more than that number of bunches can be ripened. Keep the plants well watered, and see that they are made secure against strong winds.

Winter Tomatos.—In order to secure good fruitful plants before the winter sets in, the first sowing of seeds should be made at the end of the present month, to be followed by another sowing a fortnight later. It is useless to delay this sowing until the autumn, for it is seldom that a good set of fruit can be had after October, the atmospheric conditions not being suitable. Sow thinly in boxes or in pans, and place the seed-pans in a cold frame, and grow the seedlings as cool as possible. Do not employ rich soil in the earlier stages of growth, for this will detract from success later on. A well-tried and suitable variety is Sutton's Winter Beauty, a Tomato difficult to surpass for its excellent setting qualities, even in adverse weather.

Winter Vegetables.—Make good any losses in the winter vegetable quarters as fast as they occur, choosing a showery day if possible for the work. Encourage free growth at all times, and if the weather continues dry, resort to watering. Keep the soil deeply stirred between the lines, which will, in addition to admitting air, etc., also serve the purpose of keeping down weeds.

Parsley.—To obtain a supply during the winter and spring months, a sowing of Parsley seeds should now be made. Suitable borders in plenty are available for the purpose after the crops of early Potatos, Cauliflowers, or Peas are removed. Parsley requires a rich soil, therefore a dressing of short manure should be incorporated with the soil before sowing. Select a good strain, using, if possible, "Dobbie's Selected," which is one of the best and most ornamental, as well as useful, kinds.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Cherry Trees ripening their fruits should receive great attention in the matter of watering, for they will need plenty of moisture. See to the proper tying of the growths, especially of cordon trained trees. The Cherries should remain on the trees till they are thoroughly ripened, for although some kinds of fruits will mature when gathered before they are ripe, Cherries will not, and if they are harvested prematurely, their skins become hard and tough. Late varieties should receive copious supplies of water, and should be constantly syringed, in order to combat aphides. Trees trained against north walls will not require as much watering as those on west and south-west walls. Bush and pyramid trained trees on light soils will need water. Cherry trees should not be neglected after the fruits are gathered, but should receive careful watering and syringing till growth is matured. As a protection against birds, cover the trees with small-meshed netting, as soon as the fruits show colour.

Peaches and Nectarines.—The shoots on these trees are growing very fast, and will require attention. All new growths not required for next year's crop should be removed. Carefully tie all growths that are allowed to remain, and if this is done neatly and well, much better results will accrue both in appearance and in permanent value. The shoots can be trained in position against the wall by means of small lengths of bamboo cane slipped in between other branches. The canes should be split into small, flexible pieces, each about a foot long, and if they are saved in the autumn, they will be serviceable for several years. Syringe the trees on all available occasions—every afternoon, if possible, at about four or five o'clock—and give the foliage a thoroughly good soaking, commencing the work from the bottom of the tree, otherwise the lower foliage will become wetted from the dripping of the upper leaves, and, hanging, will not become wetted on the under surface. The syringing must be done very thoroughly in order to keep the foliage immune from red-spider. Occasionally the foliage should be sprayed with XL-All insecticide. Frequent applications of manure water to the roots will be found beneficial to the trees. The stimulant may be either drainings from the cowyards or from the stables. The best time to apply food to the roots is immediately after the stoning period, when the tree puts forth all its vigour to develop its fruits. Some approved artificial manure dissolved in water should be applied alternately with the drainings. Arrange the foliage about fruits that are beginning to swell of such varieties as Waterloo, Amsden June, Hale's Early, and Early Alfred, so that the sun's rays will reach them. The earlier this is done the better will be the colour.

Currants and Gooseberries.—The bushes have been badly attacked by aphis, owing to the prevailing cold nights and east winds. If the shoots are very badly infested, they should be shortened to five or six nodes. This will serve to get rid of the aphis and at the same time further the development of the fruits. Early varieties of Gooseberries will be much benefited by being now pruned, especially cordon trained trees. The variety Yellow Champagne is still a great favourite for early use. Langley Gage and Langley Beauty are both good kinds, and both bear profusely as cordon trained trees. Crown-Bob and Dan's Mistake are also excellent varieties, and can be used for both dessert and culinary purposes. They will keep late in the season, and grow to an enormous size. Whinham's Industry, Keepsake, and Lancashire Lad are other good varieties. The bushes are greatly benefited by a mulching of cow manure early in the season. The Gooseberry crop this season is very heavy.

Strawberries Ripening.—The trusses of fruit should be supported from the soil, especially if the weather be showery; should the weather remain dry, copious supplies of water will be necessary, especially to late fruiting varieties.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

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Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	June 26	Roy. Hort. Soc. Coms. meet.
WEDNESDAY,	June 27	Richmond Flower Show.
FRIDAY,	June 29	Roy. Bot. Soc. meet.
SATURDAY,	June 30	Windsor and Eton Rose & Hort. Show. Dutch Gard. Soc. meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—62·2°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, June* 20 (6 P.M.): Max. 80°; Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 21 (10 A.M.): Bar., 30·4; Temp., 71°; *Weather*—Overcast.

PROVINCES.—*Wednesday, June* 20 (6 P.M.): Max. 75° London; Min. 56° Liverpool.

SALES.

WEDNESDAY—

Palms, Plants, Ferns, Geraniums, &c., at 67 & 68, Cheapside, E.C., by Messrs. Protheroe & Morris, at 1.

FRIDAY—

2,500 Imported Odontoglossum crispum, Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Education and Routine.

The phenomenal success of the Royal Horticultural Society of recent years imposes upon it corresponding responsibilities. In this country, justifiably or not we will not stay to consider, our Government and our municipalities show ever increasing energy in the imposition and collection of rates and taxes. They display, however, a by no means proportionate tendency to encourage measures having for their object the mental and bodily health of the citizens. Commercial interests and the material welfare of the nation are, of course, not neglected, but they are apt to be treated one-sidedly, inadequately, and with a want of foresight. This is no question of party politics, for a want of scientific treatment of these great questions is as conspicuous on one side as on the other. It is true that of late years some efforts have been made by public bodies, especially by the Board of Agriculture, to improve and extend our educational machinery and to promote the study of the conditions upon which the health and well-being of the people depend. But these efforts, however laudable, are clearly inadequate. In our own special department we have but to look at the work done by the several States, or by the public institutions of the United States, or of Germany, to realise how relatively insignificant are the corresponding efforts made here. Englishmen have got into the habit of thinking that such matters are better left to private enterprise. But private enterprise means the promotion of the interests of the individual rather than of the community. The unsavory details connected with certain commercial establishments in the United States, which have horrified the public and called for the indignant remonstrance of the chief of the State, go to show that the unbridled greed of gain needs to be checked and controlled by some agency representing the interests of the community at large.

At the meeting of the Horticultural Club, on the 12th inst., the subject of education in agriculture and horticulture was broached by Mr. Brooke-Hunt, of the Board of Agriculture. Mr. Hunt's address was descriptive of the inception, progress, and present position of horticultural and agricultural education in the British Isles. Apparently, so far as State aid to and interest in rural education of this class are concerned, little or nothing was done in this country anterior to 1888, when the munificent grant of £5,000 (!) was made in furtherance of such knowledge, and even of this the bulk was absorbed in dairy interests rather than those of horticulture. From this point the lecturer detailed the spread of general interest and the somewhat sporadic rise of colleges, institutions, and executive bodies about the country under the stimulus and guidance of the Board of Agriculture, and showed that a good deal of healthy work has been done in the way of awakening the interest of the young in garden-culture. From the lecturer's remarks it was obvious that some progress had already been made in the direction of agricultural and horticultural State aid, and that the work was steadily progressing. It was, however, clear to his hearers that the results obtained could bear no satisfactory comparison with those attained by the United States of America, with their long lists of some 60 or 70 agricultural experimental stations, or with the organizations of other countries whose treasuries appear to be less firmly closed than ours to the appeals of the far-seeing practical scientist. "No funds" is the constant cry on this side, and hence the bulk of progress is due to private enterprise. The important nature of the lecturer's remarks was fully recognised, as was the value of such education as a factor in re-peopling the rural districts by qualifying the rising generation to utilise the land to the best advantage. Sir John Llewelyn considered that every country boy should know how to grow a potato and every country girl how to cook it, the two things typifying classes of knowledge at once of domestic and agricultural value.

As we write we have before us the prospectus of the State Agricultural College of Colorado, one of the many which reach us almost weekly. It may be worth while to give a few extracts as to the staff and what it does. First there is the State Board of Agriculture and its officers, numbering 14 persons, charged with administrative duties. Then there are 12 "standing committees" dealing with various departments. The Board of Instruction comprises professors, instructors, assistants, college lecturers, field lecturers, and field agents. The subjects taught comprise political economy and logic, mechanical engineering, civil and irrigation engineering, zoology and entomology, chemistry and geology, domestic science, history and literature, botany and horticulture, forestry, veterinary science, constitutional history and irrigation law, agriculture, agronomy, animal husbandry, rhetoric physics and applied electricity, meteorology, chemistry, sewing and millinery, cookery, embroidery, mathematics (three professors), physics, forge and foundry practice, carpentry, architecture, modern languages, elocution, drawing, music, book-keeping, landscape-gardening, etc.

The professors, lecturers, assistants, and instructors are many of them women. "The design of the institution is to afford thorough instruction in agriculture and the natural sciences connected therewith. To effect that object most completely the institution shall combine physical with intellectual education, and shall be a high seminary of learning in which the graduates of the common schools of both sexes can commence, pursue, and finish a course terminating in thorough theoretical and practical instruction in those sciences and arts which bear directly upon agriculture and kindred industrial pursuits."

Connected with the College is an experimental station for conducting investigations and experiments, and for disseminating the results of such investigations. We have not space to give the details of the Horticultural Hall used by the departments of botany, horticulture, and forestry, and equipped with the necessary apparatus, nor of the greenhouses, forcing houses, orchards and grounds. We must equally pass over the details of the course of study in horticulture and pomology, which occupies two years, taken after the preliminary course of general education, occupying also two years. The course of horticultural study includes the whole of theoretical and practical horticulture.

Reverting to the Royal Horticultural Society and the brilliant success it has achieved under the auspices of the President, Secretary, and Council in availing themselves of the opportunities afforded them by the munificence of Baron Sir Henry Schröder and of Sir Thomas Hanbury, we cannot overlook the corresponding responsibilities which that success entails. The Society can do, and should do, many things which the ordinary practitioner, be he a commercial man or an amateur, has not the means of doing, and, in not a few cases we fear, has not the inclination to do. The two great objects, apart from the holding of exhibitions, to which the Society, as a trustee for horticulture, should work, are the advancement of horticultural education and the promotion of research. Under the head of education we do not mean mere instruction in routine practice, which can be learnt by experience in any good garden, but such education as shall enable the possessor to avail himself of the resources which science offers in the promotion of the progress of the art, the extension of its scope, the cheapening of its processes, and the increase of the value of its results. A fully-equipped school of horticulture and a research station at Wisley have still to be established. If the endless series of reports from the American colleges do not furnish sufficient hints for the carrying out of these schemes, there are, within a few hours of our shores, the horticultural schools of Versailles, of Ghent, of Vilvorde, and others which furnish excellent examples of what should be done here.

Our Supplementary Illustration—Plumiera lutea.—There are two or three species of this genus in cultivation as stove shrubs; of these the present one is the most attractive from its large fragrant flowers, which are white, flushed and edged with rose, and with a rich yellow centre. It is probably a native of Peru, and was introduced to Kew by M. Linden. It was the subject of a coloured illustration in the *Botanical Magazine* for June, 1869, tab. 5779. The shrubs are rather subject to the attacks of mealy bug, which are not easy to dislodge, but any extra care that may be needed is amply compensated for by the beauty and profusion of the flowers. A good-sized plant will continue to develop flowers during the greater part of the year. Our illustration was drawn by Mr. Worthington Smith, from specimens exhibited by Lady Plowden.

South-Eastern Agricultural College.—A course of demonstrations and practical work in field and laboratory, on the applications of science to rural life and outdoor industries, will be held at the College, at Wye, Kent, on a convenient date (about the last week in July or first week in August) during the summer of 1906. The course will last a fortnight, and will be designed to meet the needs of those masters who, already trained in some branch of pure science, have to teach such subjects as chemistry, botany, zoology, mechanics, physics, &c., to scholars whose homes and lives are in the country, and to whom the teaching of science, as applied to and illustrated by things of importance in country life, will be of great interest and educational value. The College has special facilities for developing a course which will be useful for the masters, and through their teaching, of great value to the scholars of the rural secondary schools of the country, as it is equipped with all the necessary teaching accommodation, in the way of laboratories, lecture rooms, &c., and has attached a farm of 460 acres (including 170 acres of arable land), orchards, vegetable grounds, glasshouses, hop garden, &c. Wye is five miles from Ashford, in surroundings which are both picturesque and interesting to the naturalist.

The work of the course will be mainly practical investigation into the bearings of science on outdoor life, and illustration lectures will also be given, indicating the lines on which science teaching in rural secondary schools could be usefully developed. The following are a few examples of what would be attempted:—1, the collection of the weeds of the locality, and the study of the root system, to indicate methods of eradication and system of propagation; 2, the collection of grasses from different localities, down, meadow, hedge-row, wood, to distinguish useful and useless varieties; 3, the collection of fungi from garden and farm crops—their life history and methods of combating attacks—useful and injurious forms; 4, the zoology of the country—the collection of useful and injurious insects—the study of the birds and mammals, and their relation to the farmer and gardener; 5, the measuring of soil temperatures, and water content of tilled, untilled, and crop covered ground—the demonstration of the physical effect of rolling, hoeing, harrowing, and of other agricultural and horticultural operations; 6, the mechanics of everyday life—the demonstration of mechanical principles in implements of tillage and draught, and in the construction of roofs, &c.; 7, the composition of the soil and of the water draining from it, the influence of manures shown by experiment, the value of lime as an acid neutraliser in the soil. The cost of the course would be £5, including residence and board in College, and it is suggested that this fee might be defrayed in whole or part by means of studentships, awarded by county education committees, boards of governors, and others interested in the development of a useful system of science teaching in our rural secondary schools. Further information concerning the course can be obtained from, and applications to join should be made to the Principal (M. J. R. Dunstan), South-Eastern Agricultural College, Wye.

Flowers in Season.—From Mr. Smith's Daisy Hill Nursery, Newry, come specimens of Distylium racemosum, an evergreen shrub like a Gualtheria, or some of the Andromedas, in appearance, though widely different in reality; of this we propose to give a figure later on. Lonicera pyrenaica.—A bushy species with purplish shoots, glabrous, glaucous, obovate, rounded leaves about 1½ inches long, tapering into a very short stalk. The flowers are in pairs, borne on a short stalk and connected together by the bases of the ovaries. Each flower is about half an inch long, whitish, flushed with pink, with a broad, slightly unsymmetrical, funnel-shaped tube and a regular, spreading limb with five ovate, oblong lobes. It is a very attractive shrub, the colour of the branches and leaves, and the profusion and long duration of the flowers being great recommendations. It is a native of the Pyrenees. That it is not common in gardens may be inferred from the fact that it is not mentioned in *Nicholson's Dictionary*, though it is included in the *Kew Hand List* of trees and shrubs, and in *Loudon's Encyclopædia* of trees and shrubs, according to which it was introduced into cultivation in 1739. Aquilegias.—Some of the most charming and delicately coloured Aquilegias we have ever seen have come from Mrs. Scott Elliot, Teviot Lodge, Hawick, Roxburghshire. Some are pure white, others blue and white, pure yellow, pink with yellow corolla, pale red with orange-coloured corolla, and other shades. The flowers are of large size and excellent form, and we are not surprised to hear that our correspondent has worked for many years in th development of this excellent strain. Another consignment of Aquilegias is from Messrs. Bakers', Wolverhampton and Codsall, Staffordshire. These flowers are remarkable for the unusually long spurs they possess to the petals. In some instances this development is accompanied by the shortening of the corolla, a condition which gives to the flowers an effect that is not common. Each variety bears a name, and amongst the best are Village Belle, very large, having a pale yellow corolla and lilac-coloured calyx; Marguerite with pale yellow corolla and "Petunia violet" coloured calyx; Coquette, the corolla bright yellow, and calyx red, affording a good contrast; Blushing Beauty, pale yellow and rose pink; Bridesmaid, white and a light shade of blue; Yaller Gal; the Bride, white; Queenie, cream coloured and pale blue, &c. Our predecessors would hardly recognise the old Columbine in the elegant varieties we now possess, which, though delicate and somewhat unsuitable for travelling long distances after cutting, are nevertheless amongst the most valuable border plants we possess. Herbaceous Pæonies.—Messrs. Kelway & Son, Langport, Somerset, send us excellent flowers of choice varieties of herbaceous Pæonies, in which attractive colours and large size are alike noticeable. The double flowers include Mrs. Stubbs, flesh-coloured with white centre; Hallam, purple; Glory of Somerset, pink; Griff Thomas, pale rose-coloured with showy yellow anthers, and Summer Day, white shaded to cream. The single varieties: Mrs. Richmond, rose-coloured; Heart's Desire, pale pink and white; and Countess Cadogan, of flesh or pink colour. From the same nursery some flowers of Delphinium represent a few very choice varieties. Earl Roberts is pale azure blue and mauve-coloured; Holyrood of the same colours, but a little deeper in shade; Mrs. G. A. Sims is rich purple and blue, flowers very large; John Bright, clear lavender blue, with very faint shade of mauve; and Dagonet, dark blue, one of the richest in shade we have seen.

National Amateur Gardeners' Association.—A conversazione and musical entertainment will take place at Winchester House, Old Broad Street, E.C., on July 3, at 7 p.m.

Calceolarias.—Mr. W. Dukes, Highfield Gardens, Littleover Hill, Derby, sends us a photograph of sprays of excellent herbaceous Calceolarias cultivated in those gardens, including a plant of "Jeffries Hybrid" which has been crossed with the ordinary varieties. The plants have proved to be capital bedders, growing from 2 to 3 feet high. In our last issue we published a photograph which also showed the same kind of cross.

The Botanical Exchange Club.—We have received the report for 1905' of the Botanical Exchange Club of the British Isles. The club is in a satisfactory condition, and its work is increasing. It is of service in identifying rare and critical species of plants, and in bringing into communication members of kindred tastes. Notes on the rare and interesting species, and of their geographical distribution are given. Lamarck's name seems to be misspelt throughout, and Moquin Tandon's name should not be abbreviated as "Mog." The information concerning the forms of Rosa, Rubus, Hieracium and other "critical" genera are valuable. No fewer than 4,542 specimens were distributed among the members in 1905. Detailed information concerning the publication can be obtained from the editor and distributor, Rev. W. R. Linton, Shirley Vicarage, Derby.

Rose Catalogue.—A very full catalogue of Rose names has just been issued under the title of *Nomenclature de tous les noms de Roses.* It is the joint production of M. Leon Simon and M. Pierre Cochet, and is published at the Librairie Horticole, 84 bis Rue de Grenelle, Paris. The names of all known Roses, or at least of more than 11,000 of them, are arranged alphabetically. Concise details are given relating to the section to which each belongs, the name of the raiser, the year of production, the colour of the flowers and the synonymy. The translation of foreign names into the French language is also added. Some idea of the numbers of varieties dealt with may be gleaned from the fact that Hybrid Perpetuals number 2,791, Teas 1,434, Provins 1,713, Hybrid Teas 473, Polyantha 207, whilst varieties of cinnamomea number one only. A list is given of the varieties issued each year from 1800, when there was one only. In 1833 none was added to the list. In the year 1905 33 additions were made to the list. In 1901 no fewer than 169 new names were launched. Vibert, of Angers, is credited with 600 introductions, a far larger number than any other raiser; Laffay comes next with 388, then Eugene Verdier, with 222. British and Irish raisers are also conspicuous, but we miss the name of Prince, and also of all reference to the catalogue issued under the auspices of our National Rose Society. Though written in the French language the Rosarian not familiar with that tongue will have little difficulty in making use of this list. A few misprints are inevitable in the compilation of such a mass of detail, thus "Syrley Hibbert" is not the correct rendering of the name of Shirley Hibberd. F. Cant does not reside at Rochester, but at Colchester, and on pp. xv.-xxi. various misprints occur. Cross references are desirable; for instance, there are nearly three columns of names of Roses beginning with the particle à, as à bois brun, á cœur jaune, &c., one column of "Baronnes," half a column of "Climbing," and so forth. This makes reference rather difficult, but if an entry such as Rothschild, Baronesse, and so forth, were given, research would be facilitated.

Icones Selectæ.—Fascicles 7 and 8 of Tome V. of the *Icones Selectæ* are now published. The first part contains plates and description of Drimys aromatica, Spiræa longigemmis, Rhipsalis trigona, Atriplex confertifolia, and Passerina filiformis; and Fascicle 8 those of Eutaxia myrtifolia, Genista Nyssana, Dicliptera Niederleiniana, Vitex Negundo, and Babiana flabellifolia.

Sir Daniel Morris, K.C.M.G., the Imperial Commissioner of Agriculture for the West Indies, has arrived on a short visit to this country, and is staying at St. Ermin's Hotel, Westminster. Sir Daniel will attend the forthcoming International Conference on Hybridisation and Plant Breeding, to be held in London, and is announced to read a paper on "The Hybridisation of the Sugar Cane," on Thursday, August 2.

Flower Show at Scarborough.—A horticultural show will be held in the Belvedere Gardens, Scarborough, on July 26 and 27, in aid of the funds of the Scarborough Hospital and Infirmary. The grounds will be lent for the purpose, and the £150 offered as prize money will be contributed, therefore the whole of the receipts will be handed over to the hospital. It is intended to make Carnations and hardy flowers the leading features of the show, and there will be no classes for Roses because the grounds contain 12,000 Rose trees and bushes, many of which it is hoped will be in flower at the time of exhibition. No paper collars are to be applied to any flowers at this show; but the flowers must be shown naturally and in vases. The secretary is J. Victor Topham (c/o Walshaw & Son, Scarborough), and any information can be obtained of Mr. J. W. Drew, M.A., Fashoda, Scarborough.

A Bit of Carnation History.—A French horticulturist, B. Chabaud, has been making some research regarding the origin of the remontant Carnations, the progenitors of our present American varieties, an account of which he contributes to the *Revue Horticole*. The credit of originating this race of Carnations has usually been given to M. Dalmais, of Lyons, France, who it is said obtained the "remontant" Carnation about 1844, by artificially crossing De Mahon with a variety Biohon, the offspring being crossed with the Flemish Carnation, and the resulting progeny repeatedly crossed until the type was fixed. M. Chabaud has found that Tree Carnations were cultivated at Ollioules, France, in 1750, and even before that date, under the name of Carnation Mahonnais, known also as De Mahon. It flowered from September until June, and possessed all the characters of, and still is, a real remontant Carnation. Seedlings from Mahonnais, of dwarfer growth, and more easy to cultivate, have been obtained, but none more floriferous than this type. M. Chabaud adds:—"We are convinced that all the true remontant Carnations are the descendants of Carnation Mahonnais." *Florists' Exchange.*

Lectures on Gardening.—Dr. Wilson, of St. Andrew's University, has just completed a series of lectures on practical gardening in Aberdeen given under the auspices of the North of Scotland College of Agriculture. The class has been well attended throughout, and the lecturer's instructions have been so much appreciated that it is probable he will be invited to address the Aberdonians on a future occasion. The lectures were given in the class room of the Professor of Botany in the University of Aberdeen, the average number of those attending the lectures having been about 120.

Orchis.—The second part of this periodical, edited by Professor Udo Dammer, has been issued. It is of folio size, with the text in double column. Structural details and physiological endowments occupy a large space, but cultural matters are not overlooked. Professor Pfitzer contributes an article on the morphology and mode of growth of Orchids. Mr. Volkens writes on the Orchids of Kilimanjaro. A translation of M. Noel Bernard's article on the symbiosis of certain fungi with Orchid roots is given, and a large coloured plate of Oncidium tigrinum, var. splendida, is added.

Mr. Thomas Young.—On June 16 Lady Bullough presented to Thomas Young, her gardener, a silver cup in appreciation of his talent. During the two years he has been there, writes "J. C.," Mr. Young has re-modelled the whole place. The gardens are very extensive, and Sir George and Lady Bullough are devoted to gardening. There are 200 yards of glass, also kitchen garden, and extensive pleasure grounds, which are kept in the best of order. The climate is very mild, but the rainfall is extraordinary. The whole Island "Rhum" is swept in winter by heavy gales from the Atlantic, yet in summer it is a most delightful place. Mr. Young is a skilful grower of "Malmaison" Carnations, and in 1898, when gardener at Warren Tower, Newmarket, he showed a group at the Royal Horticultural Society which was awarded a Silver Flora Medal. He is also a good grower of Begonia Gloire de Lorraine, and won first prizes at Edinburgh for many years in succession.

A Curious Banana Stem.—A bunch of young Bananas, with a peculiarly curved or twisted stem, has been forwarded to the office of the Imperial Department of Agriculture by the Hon. J. Sealy, M.D., through Mr. J. R. Bovell, F.L.S., F.C.S., Agricultural Superintendent, Barbados. An illustration of this curious abnormality is given in the *Agricultural News*, Barbados. Dr. Sealy reports that five trees have shown this condition. In every instance the bunch seems to stick at the base of the leaves, and the stem, elongating rapidly, becomes curved. In every case where the bunch has been allowed to remain on the plant, it has finally dropped off through the rotting of the stem. Probably, remarks the Editor, the drying up of the bases of the leaves, owing to drought or disease, may contribute to this curious growth. In this case the rotting of the stem, above referred to by Dr. Sealy, is due to injuries received, when curvature is taking place, through the bunch sticking at the constricted bases of the leaves.

THE LONDON MARKETS AND THEIR SUPPLIES.

(Continued from page 163.)

SPITALFIELDS.

The district where this market is situated is much more interesting historically than for its present-day aspect. Since the latter part of the seventeenth century it has been a silk-weaving centre, the industry having been introduced by the French Huguenots who settled there after the expulsion carried out by the Edict of Nantes. In consequence it became a business district of much importance at one time, and led to a concentration of population which partly resulted in the establishment of the Spitalfields Market. This covers an area of nearly three acres between Commercial Street, Spital Square, and Brushfield Street. It is, consequently, near to Liverpool Street and Bishopsgate Street stations on the Great Eastern Railway. Growers in the northern dictricts bring in their produce by the Kingsland Road, Hackney Road, or Bethnal Green Road, while those from the east follow the Mile End and Whitechapel roads, the distributors to the dense masses of Limehouse and Poplar taking the main Commercial Road. The market is thus in touch with both large producing and consuming areas, and it is not surprising it has become of sufficient importance to attract the special attention of the City Corporation and the London County Council.

For a long period it remained one of the chartered proprietary markets, and the complaints urged by salesmen against the charges and methods are old-standing grievances. It was, no doubt, largely due to these, and to the fact that a real need existed for a good market in the locality, that an effort was made by the Great Eastern Company to establish one at Bishopsgate Street. Either the lessee or the trustees, or both, were, however, enabled by the charter to stop this, and the company was forced to transfer its market to Stratford. In some respects this has proved to be an advantage, for there are now two markets available to growers and buyers, in both of which much business is transacted. The Spitalfields market has been now taken over by the Corporation of the City of London, for it was announced some time since that "the freehold had been secured subject to a lease granted by the Goldsmith trustees to Mr. Robert Horner at a ground rent of £5,000 per annum. Under a condition of that lease Mr. Horner had rebuilt the market at a cost of £80,000.

One characteristic of Spitalfields is the large number of salesmen who are themselves growers. In other words, the producers sell their own goods in many instances. An example of this class, who is well known to numerous readers of the *Gardeners' Chronicle*, is Mr. G. Hammond, of Brentwood, who, with his sons, has been both grower and salesman for a long period, and has gained a high reputation as a fruit cultivator. When this system can be carried out conveniently it offers an obvious advantage, but it is especially adapted for growers who have sons or other relatives in the business.

Fruit and vegetables are extensively represented at Spitalfields, but it could scarcely be ranked as a market for high-class produce, though much good fruit is sold there, and the prices are quite up to the average. Still, the demand is mainly for low-priced goods to meet the requirements of the neighbourhood.

STRATFORD.

Enormous quantities of market-garden produce from Essex and the eastern counties are disposed of at Stratford, and it is probable that the market will develop to still larger proportions in the near future. It covers a considerable area south of the main road to Ilford and Romford within the loop formed by the Great Eastern line to Colchester, and the London, Tilbury, and Southend line, and has in its immediate neighbourhood some seven stations—*i.e.*, Stratford, West and East Ham, Plaistow, Upton Park, Maryland Point, and Forest Gate. Being in direct communication with the market-garden district extending from Barking and Ilford to Rainham, Romford, and Brentwood, much produce can be brought by road, and the more distant Essex gardens are conveniently reached by rail. As a distributing centre for a thickly-populated area of the eastern, north-eastern, and northern portions of London, Stratford has become very useful and important. Cheap vegetables and fruits are mostly in demand, the sale for better-quality produce being more limited; in fact, some growers, like Mr. E. Rochford, say it is of no use for the best Grapes, Cucumbers, and Tomatos. Others, again, have found that, in moderate quantities, the sale has been as ready and the prices as good as those in the leading markets. Something, no doubt, depends upon personal connections in these cases, but at the same time I should recommend Stratford as a safe market for the consignment of first-class goods. For vegetables grown in large quantities, and which have to be disposed of in tons, it affords a means of reducing the cost of carriage for all the eastern districts, and is especially welcome to those who send their crops by road, because so much time is saved in the journeys. *Lewis Castle.*

(To be concluded.)

TRADE MEMORANDUM.

Thos. Smith, alias C. E. Colman, H. Ravenhill, &c., gardener, Leeds, was charged at Peterborough on remand with obtaining, with intent to defraud, the sum of £3 15s. from Messrs. Brown, florists, on February 1. James Bryan said he was manager for Messrs. W. & J. Brown, florists, of Peterborough. Last January his firm advertised in the *Gardeners' Chronicle* for Geranium cuttings. In reply to that advertisement they received a letter from a man at Leeds who gave the name of Smith. They wrote for a sample and received it, and on January 31 Messrs. Brown sent a postal order for £5 14s. with an order for plants to the address given at Leeds, post-dated seven days. They received a second letter returning the postal order because defendant was leaving Leeds, and could not cash it before he left. He sent a second postal order to a man giving the name of Colman, at Hull, by request, and it was acknowledged, and a telegram sent stating the goods had been forwarded. No goods were received. Chief Constable Lawson said that the prisoner had admitted the offence in a voluntary statement he made to him, and also when he was brought before the magistrates on the first occasion. He admitted writing all the letters and telegrams, and sending them to Messrs. Brown, and that at the time he had no plants in his possession. He admitted a similar charge at Cambridge, and that he was convicted and fined 40s. at Liverpool on April 19, 1905, for obtaining money by false pretences. The prisoner pleaded guilty, and was sentenced to to the full possible term of imprisonment: six months, with hard labour.

A CAUTION.

Our attention has been called to certain advertisements appearing in some of the daily papers, and offering seeds, supplied through the post only, in packets. These seeds are stated to germinate very speedily, and to furnish plants of a highly decorative character with a minimum of care and expenditure. In these days of "penny packets" the price charged seems large. In any case, it is best to deal with responsible tradesmen of known reputation and not to put faith in statements as vague in character as they are florid.

THE HERBACEOUS BORDER.

Day Lilies.

The varieties of Hemerocallis have increased rapidly, and there are fully a dozen desirable sorts. All are hardy and of easy growth in deeply dug, moderately-enriched soil with abundance of moisture in spring and early summer, especially when throwing up their flower stems. For the amateur [provided cats are not numerous—Ed.] this is a distinctly good plant, requiring no supports or stakes, flowering over a long time and being useful for cutting. The plants are readily increased by division almost at any time, but preferably in spring.

The first to open its flowers early in May is H. Middendorfii. This is a smaller plant than some others, and the pale yellow flowers are only of moderate size. H. flava is the variety best known in gardens and certainly one of the best; its clear yellow flowers are freely produced and they last for a long time in good condition. H. Dumortierii throws up vigorous stems, having bronze-orange blooms, the petals of which are of a deeper tint on the outside. H. "Gold Dust" is of medium growth in foliage, yet produces extra strong flower stems each carrying from six to ten blossoms of very rich yellow; the bronze reverse of half the petals makes this variety very conspicuous.

H. "Apricot" is probably one of the best forms of the genus; the thick broad petals build up a shapely bloom of clear yellow colour, exceptionally sweet and freely produced on stiff stems, which are continuously thrown up over a long season. H. Thunbergii opens its flowers in July, and, therefore, is more valuable, extending the season and producing more bloom than any other variety; in colour it is a clear canary-yellow.

H. citrina, citron yellow, is of medium growth. H. "aureole" is a distinct shade of bronze-yellow, and very vigorous in growth. H. luteola is one of the latest to flower, grows perhaps more robust than any other variety, and in colour is pale yellow. H. aurantiaca major is of the largest size, the blooms are fully 6 inches in diameter and of a rich shade of orange-yellow. H. graminea, or, as it is sometimes named, minor, is an intensely rich orange-coloured form, with stiff flower stems, bearing numerous blossoms. H. "Dr. Regel" is a late flowering variety with rich apricot-coloured blooms, flat in form, and quite a free flowering variety. H. flammea is a new early-flowering variety of rich yellow colour. H. fulva, brown, and H. f. disticha plena are useful late flowering varieties, the latter growing especially strong. *E. Molyneux.*

HYBRID BELL-FLOWERS.

Plants resulting from the crossing of two species of Campanula include some of the loveliest garden flowers in cultivation, and I should like to draw attention to several which are particularly noteworthy. It is a useful method, when writing of plants of hybrid origin, to indicate the same by a distinctive mark, and the one generally accepted is a cross (×) affixed just before the specific name.

Probably the finest of dwarf-growing dark blue Bell-flowers is Campanula × G. F. Wilson. This splendid perennial is the result of crossing C. pulla, a fine European species with intense violet flowers, with the favourite C. carpatica, native of Eastern Europe and especially of the Carpathian Mountains. The latter species has large, cup-shaped flowers of a bright but rather pale blue colour, and grows to a height of 9 to 12 inches. It was a happy occurrence when the two species above named united to produce the lovely Bell-flower G. F. Wilson. Campanula pulla is an exquisite plant, and produces its intense violet flowers in amazing profusion when planted in positions which suit it; but in quite half the gardens where it is grown it is far from being a success. Then, again, the pendent habit of the blossoms—one of its greatest charms—does not make for effectiveness when massed for colour in the border. In the hybrid the characteristics of the parents are most happily blended. Not quite 6 inches in height, the flowers are produced almost erect, and are nearly as large as those of C. carpatica, while the colour is a pretty shade of violet-blue. Quite as hardy as the commonest weed, this flower requires very little more care, and may be used alike for the front of borders and for the rock garden. There is a form, probably a seedling variety, which has foliage of yellowish-green; but one cannot recommend it, as the colour is not bright enough to save the somewhat sickly appearance.

Of quite a different habit, although having one parent in common with the above-named hybrid, Campanula × Hendersoni is the result of cross-

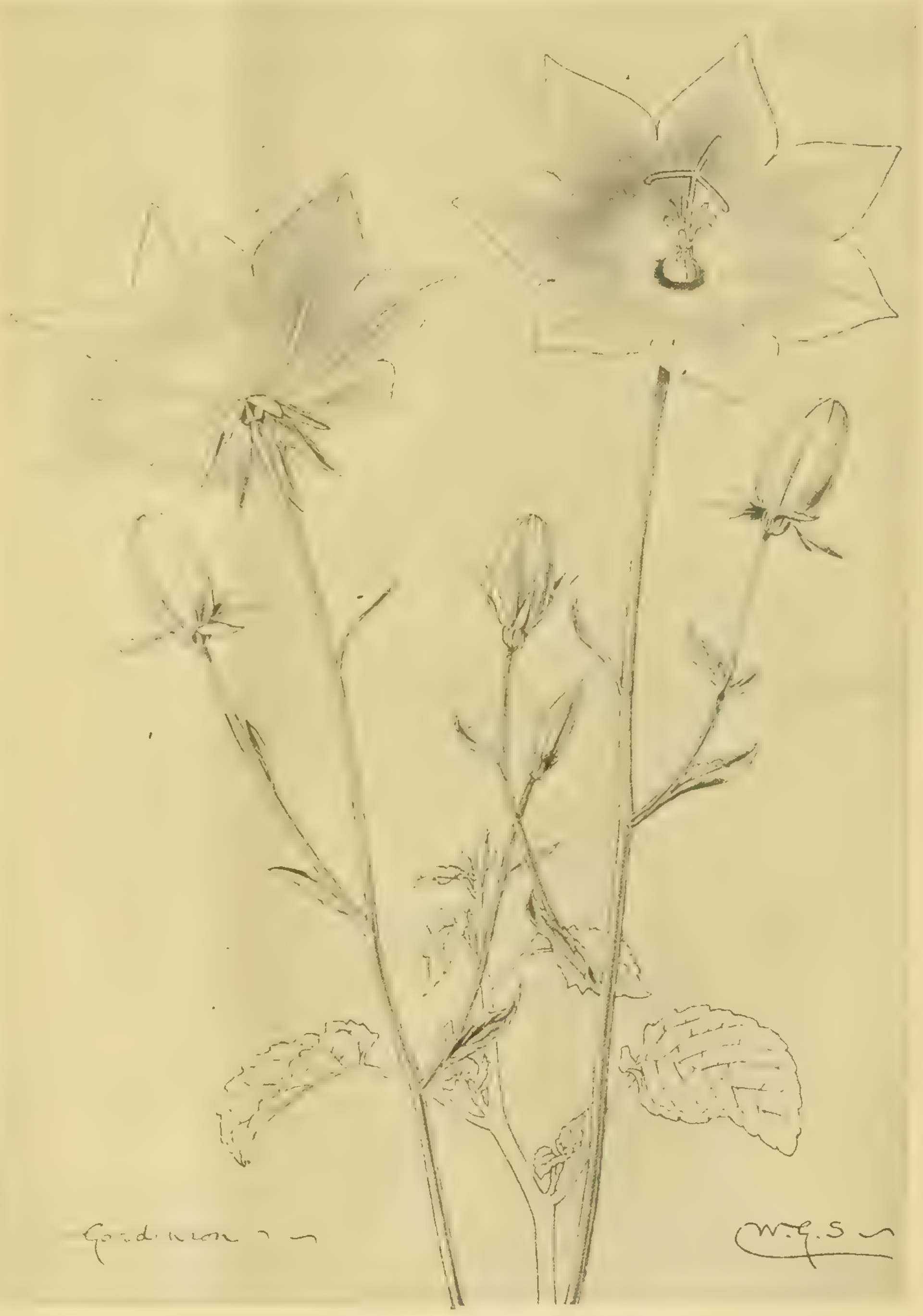

Fig. 165.—Campanula carpatica "White Star."

ing C. carpatica and C. alliariæfolia. One might be excused for suspecting the Chimney Bell-flower of "influence" in the production of this excellent plant, so similar is the erect pyramidal habit at first sight. Considering the attractive appearance of C. alliariæfolia, although that species is effective for borders and woodlands, the refined appearance of Henderson's Bell-flower comes as a surprise. The exquisite colouring, too—a delicate tint of pale blue—is most distinct and pleasing; while the flowers, produced with great freedom on erect, branching stems, 1 to 2 feet high, are large and open well. Harmonising with the soft colouring of the flowers, the slightly hoary appearance of the foliage adds the last touch to a plant at once distinct, showy, and beautiful.

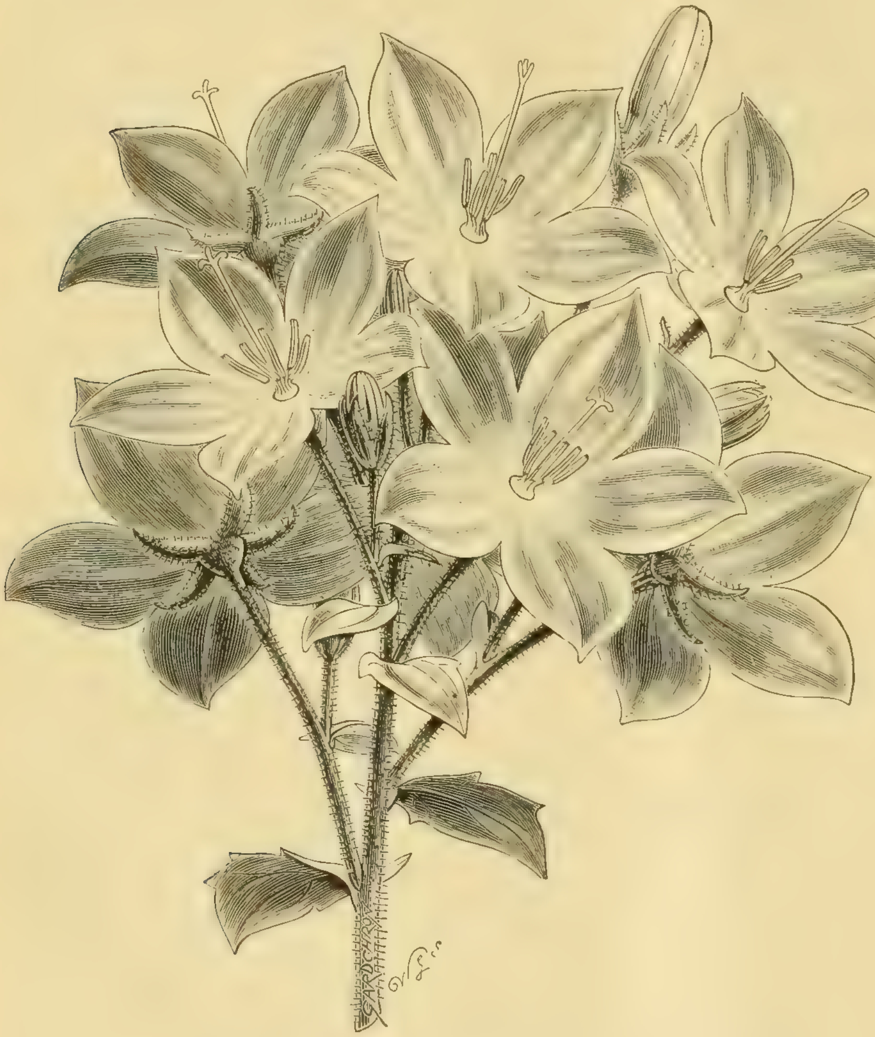

Fig. 166.—Campanula × Mayi. Flowers slaty-blue.

A third hybrid having C. carpatica (see fig. 165) for one of its parents is Campanula × Fergusoni. When it becomes known, there is no doubt but that this plant will prove a great favourite. The combination of two such excellent plants as C. carpatica and C. pyramidalis alba was sure to produce something worth having. Possessing a more bushy habit than the last-named parent, with flowers of a soft shade of pale blue, produced with great freedom on numerous, slender, erect branches, the hybrid will no doubt be very useful for supplying flowers that will be appreciated when cut. As a border plant, it scarcely leaves anything to be desired; while it is, perhaps, a better subject for pots than the old Chimney Bell-flower, since it forms compact bushes about 2 feet in height.

Campanula × Balchiniana is the only Bell-flower with variegated foliage that we are acquainted with. It is supposed to have resulted from the crossing of C. fragilis and C. isophylla alba, and it is interesting to consider the why and wherefore of the variegation. In habit, the hybrid is more erect than either of its parents, and well-grown plants may easily be mistaken, at a distance, for small-leaved, silver-edged Pelargoniums. In addition to the clear, silvery margin which characterises each fully-grown leaf, there is to be seen in the younger foliage a pretty tinge of rose colour, which adds not a little to the beauty of the plant. Usually one hesitates to recommend plants with variegated leafage—there is often an over-abundance in greenhouse and garden; but in this instance the subject under notice may well be exempted from the ban, partly on account of its extremely attractive appearance, but chiefly because of its singular origin, being, so far as I recollect at present, the only first hybrid with variegated foliage resulting from the crossing of species with normally-coloured leaves.

C. × Balchiniana will no doubt prove hardy in positions which suit C. isophylla, but it is only under glass that the best effect is obtainable, with the silver and green foliage touched with rose, and the pretty, pale blue flowers.

There are two plants in the trade which pass under the distinguishing names of Burghalt's and Van Houtte's Bell-flowers, and they are two of the best border plants in cultivation. Probably no one is able to definitely state the origin of these fine hybrids, and that is no doubt the reason why they are occasionally given specific rank in catalogues, or are placed as varieties of C. latifolia. The last-named plant is very evidently concerned in the production of the plants referred to, and if one were to decide, without further definite knowledge, what the other parent might be, it is almost certain that C. punctata (nobilis) would be named.

Campanula × Burghalti has large, pendent, rather long, bell-shaped flowers, of a rich, satiny-purple colour, beautifully marbled with darker and paler shades; while C. × Van Houttei differs chiefly in that the flowers are of a paler and rather more blue shade, and are not so conspicuously mottled. Both plants grow about 2 feet high, and produce masses of flowers in the axils of the luxuriant leaves which clothe the erect stems from base to tip.

When speaking of C. × Balchiniana, I should have also mentioned a second hybrid, which claims almost identical parentage. C. × Mayi is the production of C. fragilis and the blue-flowered C. isophylla, and might almost be taken, when out of flower, to be a green-leaved C. × Balchiniana. The most distinctive feature of C. × Mayi (see fig. 166) is the hoary tomentum which clothes the entire plant; and, by the way, this is also a characteristic of C. × Balchiniana in a less degree. When one considers that C. fragilis is glabrous, and in the way of being glaucous, while C. isophylla is only very slightly tomentose, there appears cause for surprise that their progeny should be distinguished by so hirsute a covering. So pronounced is the hairiness that one has considerable difficulty, in some stages of growth, to distinguish between May's Bell-flower and Campanula mollis—a very distinct, woolly-leaved species.

The flowers of C. × Mayi are a deep slaty-blue in colour, and in size about equal to those of C. isophylla.

It is a point for biologists to decide whether or not the exceptional hairiness of C. × Mayi indicates, in the case of one or other of the parents, the probable existence at one time of a progenitor more remarkable than the present-day types for hirsute characteristics. *E. Horton, Neston, Cheshire.*

CULTURAL MEMORANDA.

HERBACEOUS CALCEOLARIAS.

Seeds of the Herbaceous Calceolaria can be sown in May, June, and July, but the plants raised from that sown during June will generally give the best results. Sow in well-drained pots or pans, filled with fine, rich, sandy soil. Make the soil firm, and, above all, porous. If the soil in the seed pan is dry, partially submerge the pots in water before sowing. The seeds of these plants are very small, and must be handled very carefully. When sown, cover the seeds lightly with fine soil, and arrange the pots in a moist, shady part of a vinery. Place a piece of glass over the pots, for this will keep the soil moist, and also hastens germination. Turn the glass daily until the seedlings are through the soil, after which it must be removed altogether. The plants should be transplanted as soon as they make their second leaf, for if left too long in the seed pan they will never make good plants. Similar soil may be used for their potting as in the seed pans, and care must be taken to select the weaker seedlings as well as the strong ones, for the best colours are often found in the seedlings last germinated, while the stronger seedlings produce the greatest percentage of plants with yellow flowers, or flowers in which yellow predominates. Great care must be taken to afford requisite shading, for the young leaves are soon destroyed if they are exposed to the direct rays of the sun. The seedlings should never be allowed to become dry at the roots. They should be given frequent sprinklings with rain water. When the young plants have four or five leaves developed, place them separately in thumb pots that are provided with good drainage. See that the soil in which they are potted contains a good proportion of silversand. When potted, place the plants in a cold frame, and afford ventilation on all possible occasions. Endeavour to keep the plants in a healthy growing state, for should they receive a check they are certain to be attacked by aphis. Fumigation is the best remedy for this pest, and it should be done in the evening, taking care to shade the plants the next morning from the sun. In September the plants will be large enough for potting into large 60-sized pots. After their shift the plants should be placed near to the glass, and afforded a temperature of 40° to 45°. It will be an advantage if this degree of temperature can be maintained without the use of fire heat. The plants should be given their final shift as soon as growth recommences in spring. A suitable compost consists of a mixture of good yellow loam, leaf-soil, and silversand, to which is added a small quantity of some approved fertiliser and a sprinkling of soot. Pot firmly, but do not ram the soil into the pots, or the roots will not ramify freely. A light, airy greenhouse and a cool, moist atmosphere are essential requirements for the well-being of the Herbaceous Calceolaria. When the pots become full of roots, manure water used with discretion is very beneficial, but as soon as the flowers appear use clear water only. *C. Ruse, Munden Gardens, Watford.*

HOME CORRESPONDENCE.

The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

Viola Blue Bell.—As evidence of the popularity and continued effectiveness of this Viola I have to-day seen surprising and beautiful edgings or margins of it in the gardens of Earl de Grey, Coombe Court, Kingston. There must be fully a quarter of a mile of the variety, and from end to end full of foliage and bloom. When it is remembered that since it came as a chance seedling in my late brother's garden at Ealing, over 30 years ago, literally hundreds of Violas of remarkable variety and beauty have been put into commerce, it is indeed a tribute to so old a form as is Blue Bell to find it so largely grown and see it in all directions, and notably in public gardens. It is particularly charming for margins when blended with the silvery Grass Dactylis glomerata variegata. At Coombe Court propagation is conducted by division rather than by cuttings. Mr. Smith prefers division in the autumn after the plants have been cut down and new tufts of shoots formed, as then each divided piece is well rooted and denser plants result. *A. D., June 15.*

Summer Pruning of Fruit Trees.—Arising out of the article on this subject by *East Sussex*, may I suggest that efforts be made to obtain from gardeners and capable fruit-growers some general consensus of opinion as to the most fitting time to summer-prune fruit trees in the open. I have found practice in relation to time of doing this work to materially differ, but taking the country generally, it may be assumed that either early, say June, mid-season, July, or late, say August, must give the best results, unless it be shown that each month gives equally good results, which, after all, may be the case. *East Sussex* advocates summer pinching of shoots in June. A most successful fruit-grower, Mr. C. J. Salter, of Woodhatch, I believe, however, prunes so late as the end of July or early in August. In any case no bush or pyramid trees can be more perfectly set with fruit spurs than his are, for every branch is practically a single cordon. The *rationale* or reason of summer pruning is, I take it for granted, pretty well understood, but the process of converting wood buds into fruit buds is one of profound interest in gardening. *A. D.*

Rehmannia angulata.—This has stood out last winter in sheltered spots. A plant in its second year in a warm corner under a south wall is a fine sight now, having about 35 flower spikes, the individual flowers, which closely resemble those of Incarvillea Delavayi, measuring 2 inches across the lower lip. A hot, dry situation seems to suit it best. *Alfred O. Walker, Ulcombe, Kent.*

Carbolic Acid as a Fungicide.—In the spring of 1905 carbolic acid in a much diluted state—one pint to five quarts of water—was recommended by a correspondent in the *Gardeners' Chronicle* as a cure for the Cucumber spot. A friend of mine placed some of the liquid, diluted as indicated, in saucers at certain intervals amongst his indoor Tomato plants with a view to preventing the plants being attacked by Cladosporium fulvum and other diseases of the Tomato. The results were most satisfactory, his plants and fruits having remained perfectly clean and free from disease until the crops were finished. In April last I put some carbolic disinfectant powder in small flower pots and stood them on the wall plates at the colder end of Cucumber houses, replenishing the supply a few times during the last ten weeks as a preventive of the dreaded spot disease. So far this precautionary measure has been successful in keeping the enemy at bay. In addition to the carbolic powder I have during the last week or ten days half-filled some jam jars with the carbolic solution described above, and stood them alongside the pots filled with the disinfectant powder, in order, if possible, to make the remedy or preventive more certain. About six weeks ago I placed several jam-jars, filled as described, among my Tomato plants, mostly on either side of the central pathway, care being taken in watering the plants not to let any water enter the jars, as that would render the solution non-effective. At the time of writing (June 11) the plants of both Cucumbers and Tomatos are perfectly healthy and productive. I may add that in addition to placing the above-mentioned preventives in the Cucumber houses care and judgment have been exercised in the distribution of water in the houses during the afternoon, the quantity and time of distribution being regulated so as to allow of the floors becoming fairly dry before sunset. *H. W. Ward, Rayleigh.*

The Late Mr. R. S. Baxter.—As one who knew Mr. Baxter intimately in one portion of his career, permit me to add a few words to the notification of his death published in the last issue of the *Gardeners' Chronicle.* When I went to Kew, Mr. Grainger—the guide, counsellor and friend of all the youngsters—escorted me to a lodging in which I was duly installed with the youthful Baxter, and there we remained the whole time we were at Kew. There was a special interest in the association as it happened, for his father and my uncle had been competitors for a post under John Claudius Louden, though the elder Mr. Baxter proved the successful candidate. The latter frequently visited his son at Kew, and I thus made an acquaintance which was increased by several subsequent visits to the old garden at Oxford. Both father and son possessed an uncommon knowledge of, and remarkable memories for, plants. I was often astonished at the keen discrimination of minute differences displayed by Mr. R. S. Baxter, and if he had applied himself to the work, he would have become a botanist of considerable ability. It appeared at one time that a fine prospect had opened out for him, but the unforeseen happened as usual, and he never attained the position for which his undoubted natural skill should have fitted him. The name of Baxter has been an honoured one in Oxford, and will always be ineffaceably associated with the last century history of the interesting old garden. *L. Castle.*

Cattleya Mendeli "The Queen."—Upon reading your reporter's comments on our exhibit at the R.H.S. Meeting of the 12th inst., we desire to point out to you the error in quoting Cattleya Mendeli "The Queen" as a "promising very delicate blush white flower." This Cattleya is absolutely snow white, sepals, petals, and lip, the only colouring being a few lines running right back in the throat. Further, the plant in question is a well-known one, having been acquired from the collection of the late Mrs. S. Briggs-Bury under the name exhibited. *Hugh Low & Co.* [Our correspondent described the flower as it appeared to him at the time.—Ed.]

Eucalyptus coccifera at Powderham.—I enclose flowering sprays cut from the old Eucalyptus that has for many years been a feature in these gardens. At the present time it is a striking object covered with its white, palm-scented flowers, which evidently prove a strong attraction to myriads of bees. Visitors often mistake this tree for a huge Willow, which it somewhat resembles at a distance. Its closeness to the water and its narrow Willow-shaped leaves help to confirm this idea. The tree is of huge dimensions measuring 14 feet in circumference at 4 feet from the ground [see fig. in *Gardeners' Chronicle*, July 26, 1879]. At 8 or 10 feet high it branches into large spreading limbs—each a fair tree in itself—and has a spread of 30 yards. This is no doubt the finest example of its kind in the country, and is probably about 70 years old. *Thomas Bolton, Powderham Gardens, Devonshire.* [Many thanks; the flowers are very pretty and agreeably fragrant.—Ed.]

Ixora Williamsi and Others.—It was like harking back to observe plants of this seedling of the year 1873 shown so well at the last meeting at the Horticultural Hall. These were not unwieldy specimens like those we were accustomed to find in collections of stove plants in years gone by, but neat little specimens growing in 4½ and 6-inch pots, and bearing from four to six heads of bloom, set off with healthy, green foliage, reaching down to the rims of the pots. The late J. Fraser, of Lea Bridge Nursery, recommended the cultivation of Ixoras as annuals, and their adoption in the young state as market plants, a purpose for which they are admirably suited. As plants for the market, the large range of colour in the flowers, and their handsome, massive appearance, together with the hardy evergreen foliage, eminently fit them. The range of colours in the flowers, from scarlet, orange, red, pink and white, make the plants suitable for dinner table and room decoration. The plants strike readily from cuttings inserted in a regular bottom heat of 80° *Fahr.*, in a close case, the shoots taken as such, like others of the Peruvian bark family, being in a half-matured state. It is an easy matter to graft Ixoras, and by this means to restore straggling specimens to symmetrical proportions. I. Williamsi was figured in the *Gardeners' Chronicle*, on May 11, 1872. *M.*

SOCIETIES.

ROYAL HORTICULTURAL.

EXHIBITION OF FLORAL DECORATIONS.

June 20.—A special exhibition of floral decorations was held by the Royal Horticultural Society in the Hall, Vincent Square, on the above date. Although classes for floral displays are included in the schedules of most local flower shows, and prizes are offered at the exhibitions of most special floral societies, as at the National Chrysanthemum Society's exhibitions where they form a notable and attractive feature, this is the first occasion on which the premier horticultural society has devoted a show exclusively to this branch of the florists' art. At the outset we may say that the exhibition was disappointing, not that we mean to infer that the show was a failure, for the hall presented a bright appearance, but there lacked originality, and everything being on the stereotyped plan. Almost all the thirty odd tables followed the same type of decoration—a centre-piece, generally a metal flower displayer, with its accompanying corner-pieces, and trails of Smilax and Asparagus. It would have been a relief to see the old flower bowls used as a change, but the rustic displayers quite held the field. Another disappointing fact was the absence of most of the best-known London and provincial florists. The most notable arrangement was a cross, with anchor on one side and heart on the other. The cross itself was composed of flowers of a white Stock, with bands of Forget-me-nots running across the base, while sprays of Cymbidium hung over from the top. The anchor was of Maréchal Niel Roses and Erica Cavendishi, a pleasing combination of colour. Another decoration in the form of a large bell attracted much attention, but was in questionable taste. The outside was of white Hydrangea, and it was lined with white Pinks. The tongue and ropes were formed of pink Sweet Peas, but we consider the effect was spoiled by the inclusion of a spray of Roses inside the bell. The principal flowers used in the table decorations were Roses, Sweet Peas, Centaureas, Aquilegias, Carnations, and Poppies.

In every instance in which Roses were used, they drooped badly in the afternoon, and in some cases they had the appearance of having been trampled upon. The grasses and foliage varied little in the individual exhibits—Asparagus, principally A. Sprengeri, Adiantum Fern, and grasses with long panicles. Gypsophila was almost universally used. Some of the combinations of colours were good; one table that pleased us was arranged with pink Centaurea and young tips of golden Holly branches, with a little Adiantum Fern. Another pretty effect was obtained with a pale pink show Pelargonium Lily of the Valley, and a few sprays of Briza, the Dodder grass, with trailing Asparagus. A very bright but overcrowded table was arranged with the common yellow Iris, the same coloured Columbines, and Geum coccineum, with Asparagus and Smilax, the whole relieved with sprigs of Gypsophila. Among the "vase classes," the best effects were obtained with Irises. A vase of tall blue "flags," with a spray or two of Viburnum opulus and a trail of the black Briony, Tamus communis was one of the finest exhibits in this section. Another vase of large flowers of Souvenir de la Malmaison Carnations looked heavy, although the blooms were perfect specimens. The bouquets were not remarkable, and those formed of Roses looked anything but ornamental. The single Roses seemed to last in condition the better, and a design with Austrian yellow and Austrian copper Roses was pretty. One exhibitor had displayed his flowers in a base of damp moss, but the result was disaster, for they hung almost perpendicularly. A novel combination of colours was seen in a hand bouquet, with flowers of Ixias, a small yellow Oncidium, and orange and yellow Aquilegias, on a base of common Asparagus and trailing A. Sprengeri.

LIST OF AWARDS.

Gold Medal to Messrs. Perkins and Son, Coventry. Silver-gilt Flora to W. Hayward, Kingston-on-Thames. Silver-gilt Banksian to Miss A. F. Harwood, Colchester. Silver Flora to Miss Anstey, West Norwood, S.E.; Mrs. Beckett, Elstree, Herts; Mrs. Williamson, Canterbury; Wm. Treseder, Cardiff. Silver Banksian to Miss A. L. King, Coggeshall; C. Becht, Campden Hill, N.; G. D. Clark, Dover; G. H. Sage, Richmond, S.W.; R. Edwards, Sevenoaks; Miss Easterbrook, Fawkham; W. J. Pritchard, Elstree; Mrs. Brewster, Canterbury. Bronze Flora to Miss M. D. Watson, Cheltenham. Bronze Banksian to Miss A. E. Coles, Pinner; Grosvenor Floral Co., Belgrave Square, S.W.; Miss K. T. Sedgwick, Acton Hill; E. Beckett, Elstree.

Scientific Committee.

JUNE 12.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair), Dr. A. B. Rendle, Dr. M. C. Cooke, Dr. W. Somerville, Rev. W. Wilks, Messrs. G. S. Saunders, H. Gussöw, G. Massee, G. Gordon, E. A. Bowles, G. Nicholson, and F. J. Chittenden (hon. sec.).

Iris Diseased.—The Irises shown at the last meeting from the Rev. R. MEYER have rotten stems, the rhizome, as well as the basal part of the leafy shoots, being affected, and the plants finally dying, were reported upon by Mr. MASSEE as follows:—"The Iris has the bacterial disease badly. No name seems to have been given to the germ, but the disease was worked out by Dr. HEWLETT. Nothing can be done now to the plants but to remove the diseased rhizomes, and fill the holes with quicklime. Next spring, before the plants move, two inches of the surface soil should be removed and replaced by an equal mixture of fresh soil and quicklime." The disease seems to be very prevalent this season. and another specimen was received on this occasion from Chingford.

Gardenias Dying.—Mr. MASSEE also reported that "there was no specific disease present in the Gardenia, but that it was a case of imperfect cultivation. Gardenias are always difficult to manage, and neglect in watering is strongly resented."

Diseased Deodars.—Mr. MASSEE said that the Deodars from Devon were under examination, and that he would report upon them in due course.

Insects Eating Iris.—Mr. SAUNDERS said that "the caterpillar attacking Iris Delavayi, from York, is that of the Iris wainscot moth, Nonagria sparganii, which feeds upon the common yellow Iris, and on other species. Handpicking is the only means of dealing with the pest. The moth is a reddish yellow one, measuring about an inch and a half across the open wings."

Potatos Failing.—Potatos which had failed to grow, and others which had produced very weak, spindly shoots, were received from two localities, Romford (Essex) and Affpuddle (Dorset). Concerning the former, the senders say:—"The Potatos sent are of the variety called Empress Queen. They are from new Scotch seed grown in Fifeshire, and planted in well cultivated soil. They have been planted two months, and only about half of them are through the ground, most of those that are up being very weak. Those that are not up have, in some cases, not started to grow, and look as if they never would do so, while others are growing very weakly, and the sprouts seem to have some disease in them. They appear to grow a certain length, and then the stems go rotten, and in some cases a weak sprout shoots out again. There are nine acres so affected." Concerning those from Dorchester, it was written:—"Several lines of Potatos have been irregularly affected in the manner of the tuber enclosed (having a very large number of weakly shoots), and others in the neighbourhood are suffering in a similar way. The seed appears sound and good, but, while part of the row comes through all right, there are gaps where the first sprouts die away, and only the second (sometimes none) come through. A patch of May Queen is quite unaffected, and all were treated exactly alike. The seed is fresh from Lincolnshire this year." It was remarked that investigations in France had shown that this failure to grow was due to the fact that the starch could not be converted into sugar, and therefore could not be used by the plant for purposes of growth. Why this was so had not been ascertained. Certain crosses were always found to be affected in this way.

Flowers of Broad Bean Malformed.—Some curiously malformed flowers of Broad Bean were received from Mr. JAMES DOUGLAS, and were taken for further examination by Dr. MASTERS and Mr. SAUNDERS.

Tulip Disease.—Lady BINNING sent specimens of Tulips badly attacked by the Tulip mould, Sclerotinia parasitica. This fungus frequently attacks the Tulip, forming olive brown, velvety patches on the stem, leaves, and flowers. At a later stage, smooth lentil-shaped lumps or sclerotia (resting bodies), at first grey, then black, appear, mostly in the outer parts of the bulb, sometimes being so numerous as to form black crusts. When the mould is first observed the plant should be taken up and burned to prevent the formation of sclerotia, some of which are often produced in the soil close to the bulb, and thus endanger the subsequent crop. The top layers of soil to the depth of about 2 inches should be removed in winter, and a fresh dressing of soil containing as little organic matter as possible should be substituted. The admixture of lime with this soil will assist in checking the disease. (See *Journal of the Royal Horticultural Society*, xxvi., p. 43.)

Diseased Pelargoniums.—Pelargoniums attacked by Botrytis cinerea were received from Isleworth. It was recommended to spray with sulphide of potassium, and to give as much air as possible.

THE ROYAL CORNWALL SHOW.

JUNE 13 & 14.—The Royal Cornwall Agricultural Association held their show at Redruth in fine weather. The horticultural section presented a charming appearance, especially the trade exhibits. In the competitive classes there were not evidences of great cultural skill, yet on the whole there was keen competition and a good show. The awards in the more important classes were as follow:—

For 12 Stove and Greenhouse Plants: 1st, A. LANYON, Esq. (gr. Mr. Bowden); 2nd, E. B. BEAUCHAMP, Esq. (gr. Mr. H. Williams). There were some huge Codiæums (Crotons), an old-time plant Sanseveria Zeylanica, Euphorbia splendens, Anthurium Veitchii, Cattleya Mossiæ, Lælia purpurata, Cattleya Mendeli, Maxillaria tenuifolia, &c.

The best collection of 12 miscellaneous plants came from A. LANYON, Esq.; 2nd, Mrs. BICKFORD, Camborne (gr. Mr. Johns). In this class Mr. Lanyon showed a large plant of Cycas revoluta 10 feet across.

For 12 exotic Ferns, Mr. WILLIAMS (gr. Mr. Foster) was 1st, and Mr. LANYON 2nd. Cyathea medullaris, Dicksonia antarctica, and D. squarrosa figured prominently.

In Classes 20 and 21, the DEVON ROSERY & FRUIT FARM, LTD., took premier honours for 36 and 24 Roses. Sir GEO. SMITH obtained 2nd prizes in both classes. The collections of fruits and vegetables were remarkably good, showing the effects of congenial climatic conditions.

In the trade exhibits, Messrs. BLACKMORE & LANGDON's Begonias attracted great admiration; they won the Gold Medal offered by the Horticultural Committee for the best collection, and 1st prize for a collection of 36 double Begonias, amongst which were some charming seedlings which are not yet on the market. This firm also showed some fine American Carnations.

Messrs. R. VEITCH & SON, of Exeter, staged Rehmannia "Pink Perfection," which is a great improvement on the old R. angulata, Carpenteria californica, a collection of Sarracenias, Haemanthus Katherinæ (with large orange-red heads, a very striking plant), a well-berried Nertera depressa, &c., also "Malmaison" Carnations, and the best of the American kinds.

Mr. W. B. SMALE, of Torquay, exhibited a fine collection of Zonal and fancy Pelargoniums, the former section including many varieties of Mr. SMALE's own raising. These were grand, both in size and colour. Sweet Peas, Pæonies, Violas, Pansies, and other hardy flowers were included in this attractive exhibit.

Mr. W. J. GODFREY, of Exmouth, showed a great variety of Pelargoniums (fancy and Zonal), Oriental Poppies of many shades, Nephrolepis exaltata elegantissima, Cannas, Ivy-leaved Pelargoniums, &c. This was an extensive exhibit.

Other trade exhibits included Messrs. TUPLIN & SONS, Newton Abbot; TRESEDER & SONS, Truro; BROBENSHIRE, Camborne; HODGE, St. Austell; and the DEVON ROSERY & FRUIT FARM, LTD., who staged a group of Roses which included some of the newer varieties.

BIRMINGHAM BOTANICAL AND HORTICULTURAL.

JUNE 13.—The first of two special flower shows arranged to take place at Birmingham during the present summer was held in the Edgbaston Botanical Gardens on the above date. The display, which consisted of Orchids, Hybrid Rhododendrons, hardy and exotic flowers, was extensive and meritorious. In addition to medals, awards of merit were made to three Orchids, one to a hardy border flower, and cultural commendations for Gloxinias and handsome umbels of Dodecatheons.

Unfortunately rain fell during a portion of the afternoon, and interfered with a number of visitors to the show.

ORCHIDS.

The Right Hon. J. CHAMBERLAIN, M.P., Highbury, Birmingham (gr. Mr. J. Mackay), exhibited a splendid group of Orchids, consisting chiefly of Cattleya Mossiæ varieties, Lælio-Cattleya Canhamiana, Anguloa Clowesii and a pretty batch of Disa Langleyensis. (Silver Gilt Medal.)

Messrs. CHARLESWORTH & CO., Heaton, Bradford, staged an effective group of Orchids, in which were Miltonia vexillaria leucoglossa, Phalænopsis Rimestadtiana, Odontoglossum Harryanum crispum, O. Loochristiense, and a number of choice Lælio-Cattleyas, all freely flowered. (Silver Gilt Medal.)

Messrs. JAMES CYPHER & SONS, Queen's Road, Cheltenham, contributed an interesting collection of Cypripediums, Odontoglossums, Oncidiums, Cattleyas, and Masdevallias. (Silver Medal.)

Messrs. SANDER & SONS, St. Albans, also staged a group of Orchids, in which were many beautiful Cattleyas, several Cypripediums, including C. imperiale, C. Stonei × Rothschildianum, Phaius Cooksonæ, and Lælio-Cattleya Lady Wigan. (Silver Medal.)

G. H. KENRICK, Esq., Whetstone, Edgbaston (gr. Mr. J. V. Macdonald), sent a nicely arranged group of well-flowered Miltonias, Vanda teres, &c., intermingled with ornamental leaved Begonias and Ferns. (Bronze Medal.)

MISCELLANEOUS PLANTS AND FLOWERS.

Mr. W. SYDENHAM, Tamworth, sent a charming group of hardy flowers, consisting of large masses of double and single Pyrethrums, Oriental Poppies, Campanulas, Incarvillea Delavayi (very good), Aster alpinus, and German Irises. (Silver Medal.)

From Messrs. BAKER, Wolverhampton, came a collection of Aquilegias remarkable for their large, refined, and delicately coloured flowers. Cut flowers of Zonal Pelargoniums, and sweet-scented Violas were also shown in splendid condition, (Silver Medal.)

Messrs. John Waterer & Sons, Bagshot, Surrey, sent a comprehensive collection of choice hardy hybrid Rhododendrons, in which the varieties Viscount Powerscourt, W. E. Gladstone, Mrs. Holford, Kate Waterer, Mrs. Tritton, and Minnie were represented by profusely flowered plants. (Silver Gilt Medal.)

R. Wilson King, Esq., Highfield Road, Edgbaston (gr. Mr. D. Johnson), sent 18 well-flowered Gloxinia plants, for which a cultural commendation was awarded. Mr. King also showed a plant in flower of Epidendrum cochleatum, a species rarely met with nowadays.

Messrs. James Randall & Sons, Hatfield Nurseries, Shirley, Birmingham, showed a group of American Carnations containing growing plants and cut flowers in excellent condition. (Silver Medal.)

Hardy flowers were extensively shown by Messrs. Gunn & Sons, Brookfield Nursery, Olton, who had Anchusa italica with large flowers of an unusually deep shade of blue, Campanulas, Liliums, Oriental Poppies, Thalictrums, Saxifragas and several very large vases of Sweet Peas. (Silver Medal.)

Mr. C. H. Herbert, Hazelwood Road, Acocks Green, staged a very bright group of hardy cut flowers and miscellaneous flowering plants. The pretty Schizanthus Wisetonensis made a good centrepiece, surrounded by plants in pots of Olearia Gunniana, laden with white Aster-like flowers. A large assortment of Pyrethrums, Erigeron speciosum superbum, Inulas, and a host of other good things were included in this meritorious display. (Silver Medal.)

From Messrs. Pope & Sons, King's Norton, came a group of plants and cut flowers, in which were Kalanchoe flammea, South African annuals, some beautifully coloured plants of bedding Pelargonium, Mrs. W. H. Cox, and cut flowers of German Irises. (Bronze Medal.)

Messrs. Bick Bros., Warwick Road, Olton, staged a large collection of Violas and miscellaneous border flowers. (Bronze Medal.)

Mr. Robert Sydenham, Tenby Street, Birmingham, sent a collection of double and single Anemones.

From Hugh Mitchell, Esq., Augustus Road, Edgbaston, came a small collection of Pansies, including several new varieties. (Vote of thanks.)

Mr. John E. Knight, Tettenhall, Wolverhampton, showed a miscellaneous collection of greenhouse plants and hardy cut flowers, in which were Roses, Tree Carnations, Pelargoniums, Violas, &c. (Bronze Medal.)

Awards of Merit.

Lælio-Cattleya Canhamiana King Edward VII. (L. purpurata magnifica × C. Mossiæ grandis), from Messrs. Charlesworth & Co., Heaton, Bradford. Plant of vigorous growth, with large, handsome flowers, the lip being of a deep purple colour.

Phalænopsis violacea, Heaton variety, from Messrs. Charlesworth & Co. Similar to the type, but with larger and more highly-coloured flowers.

Cypripedium Maudiæ (C. Lawrenceanum Hyeanum × callosum Sanderæ). A lovely pale-green flower, striped with white.

Pyrethrum Mrs. Tippitts, from Mr. C. H. Herbert, Hazelwood Road, Acocks Green. Flowers of medium size, with rose-coloured florets and a rich yellow disc.

Cultural Commendation

to Messrs. John Pope & Sons, King's Norton, for unusually large, well-developed flowers of Dodecatheon Meadia robusta, borne on very tall, stout scapes.

ROYAL SCOTTISH ARBORICULTURAL.

Aberdeen Branch.

The members of the recently-instituted branch at Aberdeen of the Royal Scottish Arboricultural Society had a very pleasant and instructive excursion the other day to the woods of Drumtochty, Kincardineshire, on the invitation of Mr. Sydney J. Gammell, of Drumtochty and Countesswells. Over forty of the leading proprietors, factors, and foresters in the three counties served by the branch—Aberdeen, Banff, and Kincardine—were present. At the lovely village of Auchinblae, a very hearty welcome awaited them from Mr. Gammell. The company soon entered upon the first of the woods to be inspected on the Drumtochty estate. Previous to the inspection, Mr. Gammell displayed a plan of his estate, coloured, showing at a glance the portions of the estate which had been planted, indicating also the species of trees and the dates on which they were planted. Mr. Gammell also explained that he kept a series of books in which were carefully noted the acreage planted, the species of trees inserted, with the cost of purchase, planting, and attention; the progress made at certain stages, and, indeed, a clear and comprehensive record of everything which went on from the arboricultural as well as from the sylvicultural point of view. The general plan on which he proceeded, he explained, was to lay down a two-storied high forest on the uplands of the estate. At the end of 25 years the first thinning took place, and at the end of the second rotation of 25 years the wood had to be thinned very heavily and underplanted with Douglas Fir, the estimate being that the latter would, at the end of 50 years, be as big as the Larch at 80 or 100 years.

About fifty acres of the lower portion of the wood first entered was planted with Larch trees some fourteen years ago, immediately after the great storm which caused so much havoc among the woods on the east coast of Scotland. It was at once observed by the company that disease on these young trees was somewhat prevalent. On the upper part of this wood a very fine lot of Larch trees, apparently between 70 and 80 years old, were seen.

The party next inspected an extensive wood of Tyrolese Larch, planted over a wide expanse of hillside on which home Larch had been blown down or cut down some years ago. The young trees had been planted little more than a foot apart in the cup formed by the removal of the sod, which was turned to one side. There were about 5,000 trees to the acre. Some discussion here arose as to the comparative merits of the Tyrolese Larch, as compared with the home Larch reared in this country, and Mr. Gammell showed another young plantation of Larch grown from home-reared seed. From all that could be seen, it appeared that the Tyrolese Larch was a little earlier than the plants grown from home-reared seed, but the plants in both cases were so small that it was very difficult to form a definite judgment on their respective merits. A visit was next paid to the nursery, where many young trees were seen in the process of being reared, including Larch, Spruce, Mountain Pine, Douglas Fir, and other trees in large beds, besides a number of plots of other trees, especially Oaks of the sessiliflora and pedunculata varieties. From the nursery the company proceeded to inspect a fine wood of Larch trees planted nine years ago. The much better growth and altogether healthier appearance of the trees in this wood, as compared with those which had previously been inspected, was explained by the fact that the trees, although not planted for so long a time as the others, had been set down in prepared soil, on which trees had previously been growing, and which had a considerable depth of leafmould.

The effects of underplanting in a splendid wood of Larch, Pine, Birch, and other trees was next inspected. The only thing wrong here was that in several cases the young trees had been injured, presumably by the rubbing of roe deer upon them, the tendency of roe to do this being well known. Proceeding down the hill to the valley, much admiration was expressed by the botanists of the company at the exquisite specimens of the Beech and Oak Ferns met with on the way. Attention was then directed to the finely-appointed estate sawmill.

GRAND YORKSHIRE GALA.

June 20, 21, 22.—The 48th annual exhibition at York took place in the Bootham Park on the above dates. It may fairly be said that, taking it as a whole, the exhibition was fully equal to any held in previous years. Owing to the somewhat inclement season, Roses and fruit were not so extensively shown as on some occasions; still the quality was good. It may be remarked that, although the committee does not contain one gentleman directly connected with horticulture, yet it is thoroughly up-to-date in all its arrangements, and one seldom hears a complaint from either visitor or exhibitor.

Miscellaneous Plants.

In the class for a miscellaneous group of plants to occupy a space not exceeding 300 square feet, J. Pickersgill, Esq., Westwood, Leeds (gr. Mr. Donoghue), won the 1st prize. Rambler Roses, white Phalænopsis and Alocasias in variety were the prominent plants in a charmingly-arranged group; 2nd, Mr. W. A. Holmes, Chesterfield, with a very bright, well-arranged group, not quite so graceful; 3rd, Mr. J. S. Sharpe, Almondbury.

The best group of a similar character, but to occupy only 200 square feet, was shown by Mr. W. A. Holmes. He had a very nice lot of well-grown plants, and arranged them effectively; 2nd, Mr. W. Vause, Leamington.

A class for hardy herbaceous and perennial plants and flowers, Bamboos, &c., with a pool of water arranged for natural effect on a space of 30 by 8 feet, was won by Messrs. J. Backhouse & Sons, Ltd., York Nurseries, with a charming arrangement of rockery beautifully planted with small Pines, Alpine plants and hardy Ferns; 2nd, Messrs. Artingdale, of Sheffield, with a praiseworthy exhibit.

The competition in stove and greenhouse plants was not anything like so keen as was customary twenty years ago, though the specimens exhibited were on the whole excellent.

The 1st prize in Class IV. was won by Messrs. Cypher & Sons, Cheltenham, and in Class V. for five foliage plants by T. Dixon, Esq. Messrs. Cypher & Sons were 1st for three plants, and Mr. J. Blacker for three Crotons.

Messrs. Cypher & Sons had 1st prize for a single specimen Croton, and for eight decorative Palms in pots not exceeding 8 inches in diameter.

For twenty Alpine and herbaceous plants Mr. W. Pybus, Ripon, won the 1st prize with a good lot.

The special prize offered by Messrs. James Backhouse & Sons for Alpine plants open to amateurs was won by Mr. J. Nicholson, York, with a very commendable group.

Orchids, &c.

The best table of Orchids arranged for effect and measuring 12 feet by 5 feet was staged by Messrs. Cypher & Sons, Cheltenham, who had a capital display of well-grown plants, mostly of the well-known species and varieties; 2nd, Mr. J. Robson, Altrincham, with a commendable lot of plants not quite so well arranged; 3rd, Mr. Vause.

In the classes for ten Orchids in bloom of distinct varieties, and also for six similar Orchids, Messrs. Cypher & Sons were prominent first-prize winners. Notable plants in their collections were:—Cattleyas Mossiæ and Warneri, Lælio-Cattleya Aphrodite and L.-C. Canhamiana; Mr. W. P. Burkinshaw, Hessle (gr. Mr. J. T. Barker), won 2nd prize in the larger class with plant of choice varieties. His best examples were L.-C. Amelia, C. Mossiæ Wagneri (a charming specimen), a seedling Thunia with a lip resembling Pleione lagenaria, and L.-C. Fascinator. The same gentleman was a close second in the class for six varieties.

In the amateur classes this exhibitor held a prominent place, as he also did in the class for three Orchids. The Orchids, as a whole, although scarcely comparable with those at the Temple Flower Show, showed a wonderful improvement on those seen at York a few years ago.

Pelargoniums.—The best display of Zonal Pelargonium was shown by H. E. Leetham, Esq., York (gr. Mr. R. Keightley); the exhibit embraced a lot of sturdy, well-flowered plants.

The best four show Pelargoniums were exhibited by Mr. W. F. Crowther.

In the classes for 12 Zonal Pelargoniums and for six decorative Pelargoniums Mr. H. Pybus was 1st with well-grown groups of plants splendidly flowered.

Mr. J. W. Clarke was 1st for six double Zonal Pelargoniums, whilst Mr. W. F. Crowther held a similar position for four plants.

Table Plants.—Mr. J. Blacker was 1st and Mr. J. F. Sharpe 2nd respectively in the open classes for these plants; while the Rev. S. Yeats won chief honours in the amateur section.

Roses.—The best group of Roses in pots arranged for effect were those belonging to Mr. J. D. Hutchinson, Kirbymoorside; he was followed by Mr. H. Pybus.

Carnations.—Mr. J. Pickersgill was an easy 1st for a group of Carnations in bloom with a fine collection containing excellent examples of all the leading varieties; 2nd, H. Middleton, Esq. (gr. Mr. T. Wilkinson).

Gloxinias.—The best examples of these were shown by R. Lawson, Esq. (gr. Mr. Dobson).

Begonias.—1st, R. J. Foster, Esq., Wetherby (gr. Mr. J. Turton), with a capital lot of plants artistically arranged.

The class for eight distinct Begonias was headed by Mr. F. Styan; 2nd, Mr. Ferrier.

Fuchsias.—The premier prize for a group of Fuchsias was secured by Mr. J. W. Clarke, York; 2nd, Mr. W. Kettlewell.

Capt. Walker (gr. Mr. Clarke) had the best group of Calceolarias.

Cut Flowers.

In the classes for 72, 48, and 36 Roses Mr. G. Mount, of Canterbury, carried off the principal prizes, although Mr. Hutchinson's flowers in the class for 72 blooms were almost equal in merit.

The prize for twelve white or yellow Roses was secured by Messrs. G. Prince & Sons, Oxford.

Collection of 12 Bunches of Stove and Greenhouse Plants.—1st, Marquis of Northampton (gr. Mr. Searle) with a grand display arranged in separate glass receptacles, which is a much more effective manner of displaying the flowers than is ordinarily seen.

The best 12 bunches of garden Roses were set up by Colonel Mellish, Worksop (gr. Mr. J. Mollender).

The open class for a collection of hardy cut flowers, occupying a space measuring 15 feet by 6 feet, was won by Messrs. Harkness & Sons, Bedale, with a splendid bank of well-grown flowers.

The prize vase or epergne of flowers arranged suitable for a dining table was displayed by Mr. M. F. Middleton; 2nd, Lord Herries (gr. Mr. Lunt).

Messrs. Perkins & Sons won the first prize in each of the classes for hand and bridal bouquets.

Fruits.

A Table Decorated with Ripe Fruits.—1st, Earl of Harrington, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre). His best fruits were Black Hambro' Grapes and Rivers' Early Nectarine, the former being splendidly finished; 2nd, Mr. C. E. Simpson, York.

Collection of Fruits.—The class for 10 kinds only, to include two sorts of Grapes, was won by the Earl of Harrington; 2nd, Earl of Londesboro (gr. Mr. McPherson). In the similar smaller class for six varieties, the positions of these competitors were reversed.

The Earl of Harrington also carried off the principal prize for four dishes of fruits, being followed by the Rt. Honble. Lord St. Oswald (gr. Mr. Easter). Some capital Madresfield Court Grapes were included in the latter exhibitor's group.

Grapes.—The best three bunches of Black Hambro Grapes were shown by the Earl of Harrington; 2nd, F. J. O. Montague, Esq. (gr. Mr. F. Murchison); 3rd, Lady Hawke (gr. Mr. T. Oates).

Lady Beaumont (gr. Mr. Nicholls), showed the best three bunches of White Grapes, F. J. O. Montague, Esq., securing 2nd place.

The class for six Peaches was won by the Earl of Feversham (gr. Mr. Williams) with a fine dish of Hale's Early; and that for six Nectarines by Mr. J. Brennand, Baldersby Park, Thirsk (gr. Mr. Hathaway), with a capital dish of the variety Early Rivers.

The best scarlet-fleshed Melon was shown by the Earl of Harrington; the best green-fleshed Melon by Lord Deramore (gr. Mr. Goodall); and the best white-fleshed by Lord Londesboro.

Mr. J. D. Ellis, Worksop (gr. Mr. Alderman), secured the premier prize for Strawberries.

Vegetables.

The premier class was for a collection of vegetables in six varieties, the produce of Messrs. Sutton's seeds. The first prize was won by the Duke of Portland, Welbeck (gr. Mr. Gibson, the writer of our weekly calendar on vegetables). His examples of Centenary Pea and Perfection Tomato were very fine; 2nd, Marquis of Northampton.

Prizes were also offered for vegetables raised from seeds supplied by Messrs. Ed. Webb & Son, Stourbridge, the first being won by the Marquis of Northampton; 2nd, Mr. T. Hague, Carlton, Snaith; 3rd, Lady Beaumont.

Non-Competitive Exhibits.

Messrs. Kent & Brydon, Darlington, were awarded the premier prize and also a Gold Medal for an exquisite group which occupied half the side of one of the large tents, and included in the collection of plants were Rhododendron John Waterer, Mrs. A. S. Holford, Malmaison Carnation, Princess of Wales, and a splendid collection of rock plants well arranged.

Messrs. John Peed & Son, Norwood, London, S.E., showed Caladiums and Gloxinias.

Messrs. Richard Smith & Co., Worcester, had groups of Herbaceous plants, Bambusa, &c. (Banksian Medal.)

Messrs. Dickson's, Ltd., Chester, staged Pæonies in variety, and flowers of other Herbaceous plants. (Banksian Medal.)

Messrs. James Backhouse & Sons, Ltd., York, had a well-arranged group of decorative plants and flowers, and an exhibit of bouquets. (Gold Medal.)

Messrs. R. H. Bath, Ltd., Wisbech, were awarded a Silver Medal for a good collection of Pæonies.

Mr. A. F. Dutton, Iver, Bucks, staged a small but good collection of Carnations. (Banksian Medal.)

Messrs. Webb & Sons, Wordsley, Stourbridge, had a nice lot of Gloxinias, and were awarded a Silver Medal.

Messrs. Wm. Cutbush & Son, Highgate, London, W., had a splendid group of miscellaneous plants and flowers, including a fine collection of Carnations, Cardinal, Mrs. Burnett, Fiancée, and Aurora, Rambler Roses, Lady Gay, Mrs. F. W. Flight, Mrs. Wm. H. Cutbush, and Hiawatha. (Gold Medal.)

Mr. John Forbes, Hawick, had a good display of Phloxes and Pentstemons. (Banksian Medal.)

Messrs. W. Clibran & Son, Altrincham, had a well-arranged group of Carnations, Crotons, Crested Begonias, Lobelia tenuoir, and Nephrolepis Piersoni elegantissimus, and were awarded a Banksian Medal.

Mr. Vincent Slade, Staplegrove Nurseries, Taunton, was awarded a Silver Medal for a good stand of Zonal and Ivy-leaved Pelargoniums.

Mr. A. Ll. Gwillim, New Eltham, had specimen blooms of Begonias, Gloxinias, Irises, &c. (Silver Medal.)

Messrs. Jarman & Co., Chard, showed Zonal Pelargoniums, Stocks, Carnations, and also the new Centaureas, The Bride, The Bridegroom, and the Bridesmaid. (Silver Medal.)

Messrs. Wm. Artindale & Son, Nether Green, Sheffield, had an attractive display of Violas. (Banksian Medal.)

Messrs. W. & J. Brown, Stamford, had a miscellaneous collection of hardy flowers. (Certificate of Merit.)

Messrs. Thos. S. Ware (1902), Ltd., Feltham, staged Carnations and Begonias. (Silver Gilt Medal.)

Messrs. Charlesworth & Co., Heaton, Bradford, had a grand display of Orchids, including Lælio-Cattleya Aphrodite Queen of Spain, L.-C. Canhamiana alba, L.-C. Fascinator var. Star of the North. (Gold Medal.)

Mr. G. Yeld, Clifton Cottage, York, had a beautiful collection of hybrid and cross-bred Irises and Day Lilies (Hemerocallis) including Iris Lord of June, and Hemerocallis Tangerine (First-Class Certificate). He also showed Iris Hermia, very dwarf, purple, tinged with brown.

Messrs. E. P. Dixon & Sons, Ltd., Hull, displayed outside the tents a good collection of ornamental trees and shrubs. (Gold Medal.)

Messrs. Wm. Wood & Son, Ltd., Wood Green, London, N., had a miscellaneous assortment of horticultural sundries.

Messrs. McDougall Bros., Manchester, staged many samples of insecticides, fumigating compounds, &c.

Mr. J. Don, Park Row, Nottingham, exhibited Orchid peat and plant tubs.

GLOUCESTERSHIRE ROOT, FRUIT, AND GRAIN.

June 9.—A special meeting of the members of the Gloucestershire Root, Fruit, and Grain Society was held at the New Inn, Gloucester, on the above date, when prizes in a recent orchard pruning competition were presented. This is a new feature in connection with the society, initiated by W. Maurice P. Price, of Tibberton Court; and Mr. W. Hollingworth, instructor in horticulture to the County Council, the judge, congratulated the society and the donors of prizes on the excellence of their orchards. The competition was only started in April of this year, so no time was given for preparation, and the fact that he found the orchards in good condition and well cared for reflected great credit on the competitors, as it showed that they had systematically looked after their trees. The first prize of 5 guineas (given by W. M. P. Price) was awarded to W. J. R. Bennett, of Chashill, with 75 points; W. Alfred Apperly, Rodborough Court, Stroud, was awarded second prize of 3 guineas (given by W. T. A. Washbourn and W. J. G. Vicker), with 72 points; and Mr. W. C. Williams, Ayland's Lodge, Lydney, secured the third prize of 1 guinea (given by W. Michael Lloyd Baker) with 70 points. Several competitors were highly commended. The competition will be repeated next season.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

June 5.—This meeting was held at the Royal Botanical Gardens, Old Trafford, in conjunction with the Whitsuntide Show, which this year was a very good one all round. Groups of Orchids shown at the latter show were dealt with as Orchid Society exhibits, and the following awards were made:—

Gold Medals were awarded to Messrs. A. Warburton, E. Ashworth, W. Duckworth, Charlesworth & Co., and Jas. Cypher & Sons.

Silver-Gilt Medals were awarded to Messrs. R. Ashworth, Mrs. S. Wood, and P. Smith.

Silver Medal to J. W. Moore, Ltd., and a vote of thanks to J. Cowan & Co., Ltd.

First-Class Certificates were awarded to Lælio-Cattleya × Canhamiana, var. Queen Victoria, from Messrs. Cypher & Sons, and Cattleya Mossiæ, var. Queen Victoria, from Messrs. Low & Co.

Awards of Merit to Dendrobium × Arthur Ashworth (Dendrobium Dalhousieanum × D. Brymerianum), from E. Ashworth, Esq., and to Cattleya Mendeli, "Owen's variety," from Mr. Wm. Owen. *P. W.*

British Gardeners' Association.—Amongst recent donations to this association the secretary has announced the receipt of the following sums:—Mr. Robert Sydenham, £10; Messrs. Sander & Sons, £25; Dr. M. T. Masters, F.R.S., £1 1s.; and Mr. E. T. Cook, 10s. 6d.

THE WEATHER.

THE WEATHER IN WEST HERTS.

The hottest day as yet. The first two days of the week were very cool, but since then the day temperatures have risen considerably. On the coldest day the highest reading in the thermometer screen was only 57°, whereas five days later it was 76°, or 20° higher, and on the following day 77°, which is the highest temperature as yet recorded here during the present summer, but in no way exceptional for the time of year. The nights, however still continue cold; indeed, during the present month there has not occurred a single unseasonably warm night. On one night during the past week the exposed thermometer fell to within 2° of the freezing-point. At 2 feet deep the ground is at about an average temperature, but at 1 foot deep is about 2° warmer than is seasonable. Rain fell on three days, but to the aggregate depth of less than half an inch. About 4 o'clock on the afternoon of the 16th, there occurred a very sharp shower of rain and hail, and during the quarter of an hour it lasted, nearly a quarter of an inch of rain and hail fell. This fall, however, did not affect the bare soil gauge, through which there has been no measurable percolation for over a fortnight. The sun shone on an average for 5¼ hours a day, which is about half an hour a day short of the June average. The atmosphere still remains very calm, the rate of movement in no hour during the last fortnight exceeding seven miles. The mean amount of moisture in the air at 3 o'clock in the afternoon was eight per cent. less than a seasonable quantity for that hour. *E. M., Berkhamsted, June 20, 1906.*

SCHEDULES RECEIVED.

Southampton Royal Horticultural Society's Rose Show to be held at the County Ground on Wednesday, June 27, 1906.

The Reigate Rose Show, which is being strongly supported by most of the leading amateur and trade growers, will be held in Mrs. Simpson's grounds, Wray Park, on Friday, June 29. Many will remember how successful this annual show was a few years ago, and we are glad to hear that the revival bids fair to outshine the glory of its predecessor. Mr. R. E. West is one of the energetic hon. secs. and Mr. Alfred F. Blades is acting with him.

Hanley Horticultural Fete to be held in Hanley Park on Wednesday and Thursday, July 4 and 5, 1906.

MARKETS.

COVENT GARDEN, June 20.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Anemones (pink) doz. bunches...	1 6- 3 0
— coronaria varieties	1 6- 3 0
— fulgens, fl. pl.	3 0- 4 0
Azalea mollis, doz. bunches ...	4 0- 6 0
Calla æthiopica, per dozen	2 6- 4 0
Coreopsis grandiflora, per doz. bunches ...	4 0- 6 0
Carnations, per dozen blooms, best American various ...	2 0- 4 0
— smaller do. ...	1 0- 2 6
— Malmaisons ...	3 0- 8 0
Cattleyas, per doz. blooms ...	10 0-12 0
Eucharis grandiflora, per doz. blooms... ...	3 0- 4 0
Gardenias, per doz. blooms... ...	1 6- 2 0
Gladiolus, various, per dz. bnchs..	9 0-12 0
— The Bride ...	5 0- 9 0
Gypsophila elegans, per doz. bunches ...	3 0- 4 0
Iris germanica, per bunch	0 9- 1 0
— Spanish, per doz. bunches...	1 6- 3 0
Ixias	2 6- 4 0
Lilac, per bunch ...	1 0- 2 0
Lilium auratum ...	2 6- 3 0
— candidum, per bunch	1 6- 2 0
— lancifolium, rubrum and album	1 6- 2 6
— longiflorum ...	2 6- 4 0
Lily of the Valley, p. dz. bunches	4 0- 8 0
— extra quality ...	9 0-12 0
Marguerites, white, p. dz. bunches	2 0- 3 0
— yellow, per dz. bunches ...	2 0- 3 0

	s.d. s.d.
Mignonette, dozen bunches ...	2 0- 3 0
Myosotis, per doz. bunches ...	1 6- 2 0
Narcissus, per dz. bunches ...	3 0- 4 0
Odontoglossum crispum, per dozen blooms	2 0- 2 6
Pæonies, per doz. bunches ...	4 0- 5 0
Pelargoniums, show, per doz. bunches ..	3 0- 5 0
— Zonal, double scarlet... ...	5 0- 6 0
Poppies (Iceland), per doz. bchs.	4 0 5 0
— Oriental, per bunch	0 6- 1 0
— Shirley ...	0 6- 0 9
Pyrethrums, dozen bunches ...	3 0- 6 0
Ranunculus, doz. bunches ..	6 0- 8 0
Rhodanthe, per dz. bunches ...	3 0- 4 0
Roses, 12 blooms, Niphetos ...	1 6- 2 6
— Bridesmaid ...	2 0- 3 0
— Kaiserin A. Victoria ...	2 0- 4 0
— Caroline Testout	3 0- 5 0
— C. Mermet ...	1 6- 3 0
— General Jacqueminot	1 0- 2 0
— Liberty ...	2 0- 6 0
— Madame Carnot	2 6- 3 0
— Madame Chatenay	3 0- 6 0
— Mrs. J. Laing	3 0- 5 0
Statice, per dozen bunches ...	5 0- 8 0
Stephanotis, per dozen trusses	3 0- 5 0
Stocks (double white) per doz. bunches ...	2 0- 3 0
Sweet Peas, per doz. bunches ..	3 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	6 0-12 0
— — medium, bunch ...	1 6- 2 0
— —short sprays per bunch...	0 6- 0 9
— Sprengeri ...	0 6- 1 0
Adiantum cuneatum, doz. bun.	4 0- 6 0
Berberis, p. bunch	2 6- 3 0
Croton leaves, per bunch	1 0- 1 6
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	2 0- 3 0
— French, doz. bunches ...	3 0- 4 0

	s.d. s.d.
Galax leaves, per doz. bunches...	1 6- 2 0
Hardy foliage (various), per dozen bunches	2 6- 4 0
Hardy Grasses, per doz. bunches...	2 0- 3 0
Ivy-leaves, bronze	1 6- 2 0
— long trails per bundle... ...	1 0- 2 0
— short green, doz. bunches...	2 0- 3 0
Moss, per gross ...	5 0- 6 0
Myrtle, per dozen bunches ...	3 0- 6 0
Smilax, per dozen trails	3 0- 6 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldi, per dozen ...	4 0- 6 0
— larger	12 0-15 0
Araucaria excelsa, per dozen ...	12 0-30 0
Aspidistras, green, per dozen ...	18 0-30 0
— variegated, per dozen	24 0-36 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	6 0- 8 0
— tenuissimus per dozen ...	8 0-10 0
Begonias (tuberous), per dozen	5 0- 8 0
Boronia elatior, per dozen	18 0-24 0
Bouvardias, per dz.	6 0- 8 0
Calceolarias, yellow	4 0- 6 0
Chrysanthemum segetum ..	6 0-10 0
Clematis, per doz.	8 0 9 0
— in flower ...	18 0-24 0
Cocos Weddelliana, per dozen	9 0-18 0
Coleus ,... ...	3 0- 5 0
Crassula, hybrid, per doz. ...	6 0- 9 0

	s.d. s.d
Crassula, larger size	18 0-24 0
Crotons, per dozen	12 0-30 0
Cyperus alternifolius, dozen ...	4 0- 5 0
— laxus, per doz	4 0- 5 0
Dracænas, per doz.	9 0-24 0
Erica, per dozen...	24 0-26 0
— ventricosa magnifica ...	24 0-42 0
Euonymus, per dz.	4 0- 9 0
Ferns, in thumbs, per 100... ...	7 0-10 0
— in small and large 60's ...	16 0 25 0
— in 48's, per doz.	4 0-10 0
— in 32's, per doz.	10 0-18 0
Ficus elastica, p.dz.	9 0 18 0
— repens, per doz.	5 0- 8 0
Fuchsias, per doz.	6 0- 9 0
Heliotrope, per dz.	4 0- 6 0
Hydrangea Hortensia, per dozen	9 0-24 0
— Thos. Hogg ...	12 0 24 0
— paniculata ...	18 0-30 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen ...	12 0-21 0
Latania borbonica, per dozen ...	12 0-18 0

Plants in Pots, &c.: Average Wholesale Prices *(Contd.)*

	s.d. s.d.
Lilium longiflorum, per dozen ...	15 0-24 0
— lancifolium, per dozen ...	18 0-24 0
Lily of the Valley, per dozen ...	18 0-30 0
Lobelia	4 0- 5 0
Marguerites, white, per dozen ...	6 0-12 0
— yellow	15 0-18 0
Mignonette, p. doz.	4 0- 6 0
Musk, Harrison's, per doz. ...	3 0- 5 0
Pelargoniums (Zonals), per dozen	3 0- 5 0
— Ivy-leav'd, p.dz.	5 0- 8 0

	s.d. s.d.
Pelargoniums, show	8 0-12 0
Petunias, double, per doz. ..	5 0- 6 0
— single (in 60's only)	1 6- 2 6
Rhodanthe, per dz.	3 0- 5 0
Rhododendrons, per doz. ...	18 0 30 0
Roses, per dozen...	12 0-18 0
Saxifraga pyramidalis, per doz.	12 0-18 0
Selaginella, dozen	4 0- 6 0
Spiræa japonica, per dozen ...	5 0-10 0
Verbena, Miss Willmott, per doz..	8 0-12 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples:—South Australian:	
— Adams' Pearmain, per case	10 6-11 0
— Jonathans, per case	13 0-16 0
— Monro's Favourite, per case	12 6-13 0
— New York Pippins, p. case	12 0-13 6
— Rymers, per case	10 0-11 0
— Wellingtons, p. case	12 0-14 6
Tasmanian per case:	
— Alexanders ...	9 6-10 0
— Sturmers ...	10 6-12 0
— French Crabs..	9 6-10 6
— Altristons ...	9 0-10 0
— Sc. Pearmains	10 6-12 6
— Prince Alfreds	11 0 —
— N.Y. Pippins..	12 0-13 0
— Roman Beauty	10 0-12 0
Apricots (French), per box ...	0 7- 1 0
Bananas, bunch ...	
— No. 1 quality...	7 0- 9 0
— No. 2 quality...	6 0 7 0
— Extra quality...	8 6-10 0
— Giants, per bunch	11 0-13 0
— Jamaica ...	4 6- 6 0
— Loose, per dz.	0 8- 1 3
Cherries (French), ¼ sieve	3 6- 4 0
½ sieve... ...	5 0- 9 6
— boxes	1 0- 2 0
— French, squares	2 0- 2 6
— English, ½ sieve	5 0- 6 0
Figs, per dozen ...	2 0- 6 0
Grapes (English), Black Hambro, per lb.	1 6- 3 0
— English, Muscat, per lb. ...	1 6- 4 0
Gooseberries (English), ½ sieve ...	3 0- 4 6
Lemons:	
— Messina, case	13 6 20 0
— Naples, p. case	30 0-40 0
Lychees, per box...	0 10- 1 0

	s.d. s.d.
Melons, each ...	1 0- 2 0
Nectarines, English	4 0-18 0
Nuts, Cobnuts, per doz. lb... ...	8 0 —
— Brazils, new, per cwt. .	45 0 48 0
— Spanish, p. bag	42 0 43 0
— Barcelona, per bag	24 6 —
— Monkey Nuts, per bag ...	18 0 —
— Walnuts, dried, cwt.	35 0 —
—Chestnuts, Italian, per bag ...	13 6-15 0
— Cocoanuts, 100	10 6-13 6
Oranges, Valentia, per case ...	20 0-32 0
— Murcia ...	10 0-16 0
— Navel	11 0-12 6
— Jamaica ...	10 6-11 0
— Blood	9 6-11 6
Peaches (English), per dozen ...	4 0-18 0
Pears, stewing varieties, per ½ bushel	2 6- 3 0
— stewing, crate	10 6 —
Tasmanian and Australian Pears, p. tray:	
— Winter Nelis ..	4 0-10 0
— Glou Morceau	7 0- 9 0
— Vicar of Wakefield	5 0- 8 0
— Bergamotte ...	2 6 —
— Beurre Diel ...	2 0- 4 0
— Easter Beurré	6 0 —
Pineapples, each ...	2 9- 4 6
Plums (Cape), per box	10 0 —
— French, p. box	0 6- 0 9
Raspberries, per putt.	2 0 —
Strawberries, p. lb.	2 0- 3 0
— Second quality	0 6- 1 3
— French, crates (4 baskets) ...	7 6-10 0
— French, crates (10 baskets) ...	8 0-10 0
— Southampton, per basket ..	2 0- 3 6

Vegetables : Average Wholesale Prices.

	s.d. s.d.
Artichokes, Green French, p. doz.	1 0- 3 6
Asparagus, per bundle:—	
— English, per bundle... ...	1 0- 2 6
Beans, French, p.lb.	0 4 —
— Broad, per pkt.	0 6 —
— Broad (English), per bush.	3 6 —
— Broad, per pad (loose)	2 0- 2 6
— Flageolet, box	1 0 —
— Home grown, per lb	0 8 —
— French, p. pad	2 6 3 6
— French, per ½ sieve	2 6- 4 0
— Channel Island	0 8 —
Beetroot, bushel ...	1 0 —
Broccoli, sprouting, per bushel	1 6- 1 9
— per doz. ...	1 0- 2 0
Cabbages, Spring, per bag ..	2 6 —
— red, per bushel	1 6- 2 0
Carrots, French pad	3 0 —
— per bag, unwashed ...	2 0- 3 0
— per dz. bnchs., washed ..	1 6 —
— new, per dozen bunches ...	5 0 —
Cauliflowers, per tally	3 0-10 0
Chow Chow, per dozen	1 6- 2 0
Cucumbers, dozen	2 0 2 6
Endive, per dozen	0 10- 1 3
Horseradish, foreign, per dozen bundles ...	20 0-24 0
Leeks, 12 bundles	1 6- 3 0
Lettuces, Cos, per dozen	2 0 —
— French, per dozen	0 11- 1 0

	s.d. s.d.
Marrows, per doz.	6 0 —
Mint, per dozen ...	2 0- 3 0
Mushrooms (house) per lb.	0 6-0 10
— Buttons, per lb.	0 6-0 10
Mustard and Cress, per dozen pun.	1 0- 1 6
Onions (Egyptian), bag	4 6 —
— pickling, per bushel	3 6- 4 0
— French, ½ bag..	2 3 —
— Spring, dozen bunches ...	1 0- 1 6
Parsley, 12 bunches	1 0- 1 6
Peas (French flats)	3 0 6 0
— English, per bushel	6 0 —
— Channel Islands, per lb....	0 6- 0 8
Potatos (new):—	
Canary, cwt....	13 0-15 0
— Channel Island Kidneys ...	0 2½- 0 3
— Jersey, cwt. ...	7 0 —
— St. Malo, cwt.	6 6 —
Lisbons, p.case	2 9 —
Rhubarb, per doz. bundles ...	2 6 —
Spring greens, per bushel	1 3 —
Salsafy, per dozen bundles ...	4 0 —
Tomatos:—	
— English, per lb.	5 6- 6 0
— per doz. lbs. ...	4 6- 5 0
— small selected	4 0- 4 6
— Seconds, per 12 lbs.... ...	3 0 —
Turnips, per doz. bunches ...	1 0- 1 6
— bags	1 0 —
— new, per dozen bunches ...	3 0- 4 0
Turnip Tops, bush.	1 0- 1 6
Watercress, per doz. bunches...	0 4 —

Remarks.—Denia and Valencia Oranges are now practically finished, there being scarcely any on the market. The bulk of the Oranges obtainable come from Murcia. Lemons are much dearer, realising 5s. to 7s. a case more than last week. English Gooseberries are now coming in much larger quantities, and prices are lower in consequence. Some English Cherries were on the market during the week, but they were very small fruits. *E. H. Rides, Covent Garden, June 20.*

Potatos.

Lincolns, 50s. to 60s.; Dunbars, 100s.; best Scotch, 75s. to 80s.; Jerseys, 7s. to 7s. 6d.; St. Malo, 6s. 6d. to 7s.; Cherbourgs, 6s. to 6s. 6d.; Lisbons, 3s. per case.—*John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Large supplies of bedding plants are still seen, but trade in them is still falling off. It does not seem likely that growers will clear their stocks readily this season. This morning many were complaining of dull trade, and at closing time much material remained unsold. Rambler Roses are now plentiful, but they vary considerably in quality. I noticed well-flowered plants of Dorothy Perkins, in 48 pots, were making 4s. each. The crimson varieties in larger plants have also sold well, but it is impossible to quote prices, for they vary greatly, and the demand fluctuates from day to day. Lilium longiflorum in pots is over plentiful. Tall plants of L. lancifolium album and roseum are seen. Ericas are still available, including ventricosa magnifica in well-flowered plants, and E. Bothwelliana. Boronia elatior will soon be over. Well-flowered plants of Yellow Marguerites are more plentiful. The white variety can be had in all sizes. Bouvardias are already seen in the market. I noticed the varieties President Cleveland, Priory Beauty, and Jasminoides this morning. Handsomely-coloured plants of Coleus are numerous. Chrysanthemum segetum is over-plentiful, and prices are lower. Crassulas are also abundant; some fine plants, in 32 pots, realised as much as 24s. per dozen. Hydrangeas are plentiful and of good quality, especially hortensia. Plants of H. paniculata vary in quality; some are very good. Spiræas have little demand. Good plants of Verbena Miss Willmott are difficult to procure, and the purple and scarlet kinds are not over abundant. Best Mignonette is also rather scarce. Zonal Pelargoniums are over-abundant and lower in prices. Ivy-leaved sorts do not vary much. Show varieties are over-plentiful. Saxifraga pyramidalis is still good, but supplies will not last much longer. Large plants of Acer Negundo variegatum are seen, but they appear to have little demand. Some growers have nearly finished marketing spring flowering plants, and Ferns are becoming more prominent.

Cut Flowers.

Supplies all round are very abundant. Hardy flowers arrive in large vanloads. Pyrethrums, both single and double, of the very best varieties are seen in great heaps. Pæonies are not quite so abundant. Irises from English growers are now of very good quality; supplies of Spanish varieties are excessive, and there are some very fine varieties of the Engligh type. Poppies include the Iceland, Shirley, and Oriental varieties. Sweet Peas are very plentiful, and the quality of the flowers varies. Yellow Carnations are more plentiful. Malmaisons vary in quality, the best sell readily, but there is a poor demand for flowers of second quality. Many of the American varieties are left unsold at closing time. Lilium longiflorum, which advanced a little in price at the end of last week, was plentiful again this morning. Statice can be had in blue, white, and yellow shades. Gypsophila elegans is seen in large heaps. Coreopsis grandiflora is pretty. Gladiolus The Bride, and the pink varieties in several shades are plentiful. Cornflowers (Centaurea cyanus) are seen in several shades of colour; the pink and deep blue are greatly appreciated. Roses continue over plentiful; even the best do not clear out well. Flowers of General Jacqueminot from the open ground are rather small, and show signs of having suffered from the late frosts. Stephanotis, Tuberoses and Gardenias are all plentiful. Eucharis are rather scarce. Hardy foliage is better developed. Asparagus, Smilax, Adiantum and other foliage are all abundant. *A. H., Covent Garden Market, Wednesday, June 20, 1906.*

TRADE NOTICE.

John Lytle & Sons, Limited.—This company has been registered by George O. Lytle, 19, Eustace Street, Dublin. Capital £50,000, in £1 shares, to acquire the stock-in-trade, &c., of John Lytle & Sons, of 34, Victoria Street, Belfast, and to carry on the business of seed merchants and cleaners, nurserymen, produce merchants, manure merchants, &c. Registered office, 34, Victoria Street, Belfast.

GARDENERS' DEBATING SOCIETIES.

EGHAM AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.—At the last meeting of this society, Mr. A. Sturt in the chair, Mr. Peerless, of The Gardens, Glenwood, Virginia Water, read a paper, entitled "Provident Gardeners." In the course of his remarks, the essayist pointed out the great advantages of belonging to such societies as the United Horticultural Benefit and Provident, the Royal Gardeners' Orphan Fund, and the Gardeners' Royal Benevolent Institution. A discussion followed on the advantages offered by these and other societies. The exhibits included an excellent group of Gloxinias, from the President (Gardener, Mr. Lingwood), Lobelia, Carter's Double Blue, from Mrs. Worsfold, and a vase of Rosa camelliæfolia from Mr. G. Baskett. *T. J. W.*

ENQUIRIES AND REPLIES.

Steam Motor Lawn-Mowing Machines.—I should be pleased to read remarks from anyone having had experience with the different machines that are now in use about the country. We have had two of the Lancashire made machines in use for some years and find the greatest difficulty with them, the burners bursting sometimes even in a day or two after being put in new; at other times they will last for a week or two or longer. I think that if we could get a perfect burner, or one that would last a reasonable time, the Motor mower would be of great service where there is a lot of lawn to be cut; as it is, the annoyance and expense of the burners are enough to make one feel that they are anything but a saving of time and labour on the pony machine. Any hints as to the best of the many different machines made, and how the burners can be best managed, would be most welcome. *J. T.*

Lilium Sutchuanense.—Will "A. O." or some other correspondent indicate the difference between this species and L. Maximowiczii to which it is apparently very closely related? *G.* [Judging from the figures, the leaves of Sutchuanense are more densely crowded and spirally arranged instead of being loose and alternate as in L. Maximowiczii. There may be differences in the bulbs and mode of growth. Perhaps "A. O." or some other cultivator will kindly give our readers the benefit of their experience. Ed.]

ANSWERS TO CORRESPONDENTS.

Agricultural Holdings Act: *Nurseryman.* Our correspondent has in his mind the Agricultural Holdings Act of 1900, which amended the Act of 1883, and which applies to land wholly or partly cultivated as a market garden. The Act was not expressly stated to apply to nurseries, but it dealt with the protection of young fruit trees, the planting of orchards or fruit bushes, &c. Furthermore, recent cases in the Law Courts go to support the view that in many instances nurserymen are entitled to rank as "market gardeners" for the purposes of the Act. *Lex.*

Beetle: *A. D. & Sons.* The insect is a specimen of the Garden Chafer or June bug (Phyllopertha horticola), a well-known pest both in the beetle and in the grub stages. The perfect insects can be trapped by shaking them from the trees into a sheet, or into an open umbrella. This should be done in cold, damp weather, when the insects are in a torpid condition; on a fine, warm day they will fly away when disturbed. The grubs live on the roots of various plants, and are at times very destructive to grass. Watering with one part of gas liquor to nine parts of water will destroy the grubs.

Carnations: *W. D.* We have not discovered any positive signs of disease, but the plant is exceedingly weak, and you will do well to obtain fresh stock for propagating purposes.

Clover in Lawn: *C. E. M.* You had better encourage the grasses to grow with unusual vigour, that they may smother or crowd out the Clover. Sulphate of ammonia and nitrate of soda are chemical manures that have a very stimulating effect on grasses, but their action on Clovers is of a contrary character. Several dressings with either of these manures or with a mixture of both may be made during summer, making an application of about 1 lb. of manure to each rod of land. If you apply more than this at one time, the manure will have the effect of disfiguring the lawn by causing the growth of the grasses to become brown. When you have got rid of the Clover, or early next spring, afford a liberal top-dressing with rich soil, or the grasses will become impoverished by the extra stimulation to which they have been subjected.

Figs: *G. H.* and *W. P.* Both samples have the appearance of being attacked with the fungus Cercospora Bolleana. Remove all leaves that are found to be disfigured and burn them, also any of the "fruits" which may fall or are about to fall. Fig trees require much moisture and rather free ventilation when cultivated under glass. Syringe the trees vigorously every morning and afternoon when the weather is bright, and leave a little top ventilation open all night, even though you may need to use more fire heat in consequence.

Grafting Apples on Willows and Hornbeams: *F. and others.* We do not like to say that any thing is impossible in nature, but for all practical purposes, at least, the thing is absolutely impossible. Last week we had a Daisy engrafted (?) on a Buttercup, but a touch sufficed to detach the two, and we had no difficulty in "grafting" other specimens. Columella, Virgil, Pliny, and other ancient writers mention similar occurrences, but they are all capable of explanation without attributing them to any real process of grafting.

Grape Muscat of Alexandria: *N. W.* The leaves have every appearance of being attacked by the mysterious "browning" disease. You should have sent the tips of the shoots and the tendrils, as it is more readily determined from those parts of the vine. If the tendrils are brown and tough. it is an almost sure indication of the disease. About the cause of the complaint little is known—by some authorities it is attributed to a slime fungus. With regard to remedial treatment we can only advise the burning of the affected parts. See that the borders are in an efficient state, when fungus will be less likely to appear.

Grapes Spotted: *W. P. C.* The black spots are probably the deposit of some fly, and are readily removed by the finger-nail. Discontinue spraying with the liver of sulphur, as the berries are nearing ripening. You can do nothing more now.

Incinerated Earth: *B. Puris.* We suppose baked earth is meant, but we will enquire of our colonial correspondent.

Insects: *F. C. L.* Swarming with an aphis-like insect, Chermes. Cut away the affected branches as far as you can, and use petroleum emulsion in the form of spray. We fear, however, there is little chance of saving the larger trees.

Iris: *J. T. S.* The appearance is due to the fusion of two flowers into one. Theoretically the number of parts of the flower should be doubled, but during the fusing process some of the parts have been squeezed out of existence, so that whilst in your flower there are more parts than in an ordinary flower, there are fewer than there would be in two.—*J. G.* See report of Scientific Committee in our present issue.

Names of Plants *J. S.* Mespilus germanica.—*F. S.* 1, Berberis Wallichiana; 2, Scilla peruviana; 3, Limnanthes Douglasi.—*E. C. C. D.* A Cistus: we cannot name the species from the specimen sent.—*H. S.* 1, Iris sibirica white variety; 2, Geranium sanguineum; 3, Veronica gentianoides; 4, Sagina procumbens; 5, Spergula arvensis.—*H. S.* Cupressus sempervirens. —*R. G. Whitfield.* Cornus mas, variegated form.—*D. F.* 1, Next week; 2, Lilium Martagon. —*Cymru.* 1, Rhododendrum ferrugineum; 2, Euphorbia Cyparissias; 3, Veronica teucrium; 4, Cerastium tomentosum; 5, Ajuga reptans; 6, Iris sibirica; 7, Hesperis matronalis, white variety; 8, Heuchera.—*E. S. W.* 1, Iris sibirica; 2, we cannot undertake to name the Rose; send to a grower.—*E. G. Ashe.* 1, Tsuga, perhaps T. canadensis; 2, a Cedar, probably the Deodar; 3, Abies concolor; 4, a Cedar, whether the Deodar or the Lebanon we cannot tell from the scrap sent; 5, Euonymus japonicus var. radicans; 6, a species of Andromeda; send when in flower. Another time send better specimens; it is very difficult to give a satisfactory determination of such scraps.—*W. H. C.* Poor specimens, dried up. and labels tied on in the most provoking manner. 1, Medicago lupulina; 2, Lotus corniculatus; 3, Holcus mollis; 4, Achillea Millefolium; 5, Arrhenatherum avenaceum; 6, Anthoxanthum odoratum; 7, Festuca ovina; 8. Lolium perenne. —*W. K.* 1, Hyoscyanus niger, Henbane; 2, Tussilago alpina, Alpine Coltsfoot; 3, Alchemilla vulgaris, Lady's Mantle; 4, Saxifraga umbrosa, London Pride.—*G. J. H.* 1. Nephrolepis exaltata; 2, Selaginella Wildenovii; 3, Berberis vulgaris; 4, Spiræa trilobata. The Pears are badly affected with the Pear midge. See answer to J. B., in our last issue.—*Salop.* Masdevallia Harryana luteo-oculata, Odontoglossum citrosmum, Mesembryanthemum (send in flower), Spiræa trilobata. Why not number the specimens?—*Japonica.* 1, Dendrobium ciliatum, 2, Pholidota obovata.—*Marigold.* 1, Ginkgo biloba (syn.) Salisburia adiantæfolia; 2, Hybrid China Rose; 3, Köelreuteria paniculata; 4, Ranunculus lingua.—*A. W.* 1, Piptanthus nepalensis; 2, Polemonium cœruleum; 3, Mertensia sibirica; 4, Hesperis matronalis; 5, Asphodeline ramosa; 6, Ranunculus aconitifolius flore pleno.—*F. R.* 1, Tradescantia virginica; 2, Geranium sanguineum; 3, Justicia carnea of gardens; 4, Saintpaulia ionantha; 5, Peperomia argyræa; 6, Fittonia Pearcei; 7, Pellionea pulchra; 8, Meconopsis cambrica; 9, Verbascum phœniceum; 10, Crassula coccinea variety; 11, Eccremocarpus scaber.—*G. C.* Strelitzia reginæ.—*D. F.* 1, Senecio Doronicum.—*Dulwich.* Escallonia macrantha. Grape next week.—*J. R. D.* 2, Tradescantia virginica; 1, 3, 4, 5, 6, not sent; 7, Verbascum cupreum; 8, Euphorbia; 9, Thalictrum aquilegifolium; 10, Meconopsis cambrica, double flowered variety; 11, Geum chilense.—*Soarer.* Strelitzia reginæ. The hybrids from the Orchid species you mention are known as Cypripedium × Merope.

Nursery Business: *G. P.* As you have already some knowledge of the clerical part of the nursery business, you would find it the less difficult to learn the details of actual nursery work, such as propagation, cultivation, &c., and, therefore, we do not think it is too late for you to entertain the idea, if you have satisfied yourself that there are better openings for the practical man than for the nursery clerk.

Plum Leaves: *J. B.* The excrescences are due to the irritation set up by mites or gall flies.

Roses: *Mrs. G.* Proliferous Roses are very common. The centre of the flower instead of ceasing to grow continues to develop and forms fresh buds. As your plants do so persistently it will be better to root them up, and get new ones.

Shothole Fungus: *W. P.* You should have applied the copper spray sooner and more thoroughly; as it is you have left patches uncovered. Prevention is possible, cure very doubtful.

Solanum: *Lawrenson.* The warty appearance of the leaves is probably due to the same circumstances that cause the warty condition seen in Vine leaves, and known as intumescence, namely, the lack of a proper proportion in the degree of moisture and warmth of the atmosphere, and the conditions prevailing at the root. Free ventilation is the best means to prevent it, and should you place the plants out of doors for a period during the summer they would be likely to lose the symptoms entirely.

Vines: *Reader.* All you can do beyond applying the powdered sulphur to the foliage is to sulphur the hot-water pipes, as it is termed, which will have the effect of causing sulphurous fumes in the house that may kill the mildew already appearing on the fruit. The mixture for applying to the pipes is made by mixing flowers of sulphur in lime-wash, to be applied by means of a brush. The hot-water pipes must first be made very hot, as hot as is possible without causing the atmospheric temperature of the house to rise above 80°. Make the application in the evening after the sun's rays have passed off the house. When the house has been shut up, and the atmospheric temperature kept to about 80° for two hours following the operation, let a little ventilation be given, but only a little or the sudden change may cause a check to the vines. Soon after applying the mixture to the pipes, take means to check the fires, in order that it will not be imperative to keep the house dangerously hot all night. The treatment may be repeated for several nights in succession, and if care be taken no damage will be caused to the vines, but it is necessary to state that the operation is one that should only be entrusted to careful and responsible men.

Privet: *W. R.* We do not find any trace of fungus disease, and are not disposed to attribute the failure to the influence of the stable manure. A much more likely cause is that of deep planting. There is considerable physiological difference between the covering of the stem below the ground and of the bark above ground. When a bark-covered stem is inserted deeply below the surface of the ground, one of two things must happen. Either the bark must adapt itself quickly to the new conditions, and the stem become capable of producing roots, or failing this decay will commence and the plant eventually die. Privet (Ligustrum) is a quick rooting plant, and if our assumption is correct, those specimens you describe as commencing to grow again from the base have, in the time which has elapsed, adapted themselves to the new environment. The rest have perished.

Communications Received.—Heston Library Stansfield Brothers—Sir J. D. G.—T. S. Newry—E. H. W.—A. G.—E. H. W.—D. P.—W. W.—J. T. R.—M. V.—C. S.—W. G. S.—de B. C.—W. J. T., Jamaica—W. H.—H. F. McM.—F. C.—G. C.—Anxious—J. J. W.—F. W. T.—W. S. K.—S. A.—H. W.—J. C.—D. F.—A. G. S.

THE
Gardeners' Chronicle

No. 1,018.—SATURDAY, June 30, 1906.

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THE AMERICAN SYSTEM OF GROWING CARNATIONS.

IT is necessary to commence at the beginning, namely, with what is known to us as the cutting bench; but, before I proceed, I would like to say to those who are ready to despise anything that is new, that the Old Country is years behind America and Canada, not only in the culture of Carnations, but in that of Roses also, and it is high time to discard the layer and pot system for a more profitable one. I am glad to know that one firm of Carnation growers in Britain, at least, has adopted the American plan with success. The two most important contributions towards success are the obtaining of a proper cutting-bench and of healthy stock to propagate from. When possible, I would advise that the cutting-bench be on the north side of the house, because it can be kept cooler and more easily shaded than other benches. The bench must be enclosed, and provided with sufficient water pipes to maintain a temperature of from 58° to 60° in the sand, and an atmospheric temperature of 50° to 52°. Good silver or other sharp, clean sand should be placed to a depth of about 4 inches on the bench. Make it thoroughly wet, and firmly ram it down by means of a brick or other implement. For shading the cuttings I employ calico, the top piece being of the same width as the bench, with side pieces hanging down on either side suspended to wires by rings so that they can be drawn at night. There should be a space of at least 4 feet between the bench and the top curtain, for it is essential to have that much air to keep the cuttings healthy, but no draught must be permitted.

When the cutting bench is ready, and the shades made, the cuttings may be selected. It is well to bear in mind that between the early-blooming kinds there is some three months' difference in the period of flowering; therefore, in order to be able to cut from late-blooming varieties earlier, it will be necessary to commence taking cuttings the last week in October, and so on until you have the needed supply. The early and constant-blooming varieties may be propagated in November, December, January, and February with good results. During these four months cuttings make roots more easily, for the reason that the old plants are more vigorous, not having been forced, and the temperature is more easily kept low. In selecting cuttings, I would advise taking them from flowering stems, unless it is desired to propagate as many as possible, when all shoots may be taken. There may be from one to four cuttings on a stem; the upper one will be too weak—leave it; the lower one may be too hard, and, if so, leave it also; the middle ones are usually just right, therefore, with the thumb and index finger, take them out sideways. I never use the knife on a cutting, for the reason that a cutting taken out sideways has not been wounded, and is the better fortified against the attack of disease by having left on it the tough leaves at the base, and, further, such a cutting has one or more well-defined joints already formed, and will be from three to four weeks in advance of a pulled flowering cutting. When the quantity of cuttings has been gathered, and the sand in bench is well wet through, insert the cuttings at half-inch distances, three-quarters of an inch deep, in rows made two inches apart, making the sand firm on either side of the cuttings; after this has been done, water again to settle the sand about the cuttings. Spray the cuttings each day, keeping close watch that they are not too wet, also that they do not get dry along the sides of bench. There is this difference between watering and spraying: we water to wet the ground, we spray to close the mouths of the leaves, and stop exhalation. The water that the roots absorb remains in the plant or cutting, and a perfect equilibrium is maintained, there being no difference between the amount of absorption and that of exhalation; the leaves of the plant do not absorb water. If the above plan of operating the cutting bench is strictly adhered to, I find it possible to root 95 per cent., and have rooted 200,000 cuttings this season. Should the sand in the cutting-bench become green and sour, there is danger of the cuttings damping off by what is known as the fungus of the cutting-bench. Some advise sprinkling the sand with a solution of sulphate of copper and ammonia, but if you renew the sand after rooting two batches in it there will be no trouble. This is the safest and best way. Before leaving the propagating bench I want to impress the reader with the importance of rooting the cuttings in as low a temperature as I have advised, for I believe more injury is done Carnations from rooting them in a high temperature than from any other cause; the average time needed for rooting is 28 days. Some varieties require a little longer, and some a little shorter time. After being rooted, a temperature as low as 55° by day and 50° at night is best. By treating them in this cool manner the plants will be likely to remain free from disease; therefore, I believe in rooting them cool and in growing them on cool until planting.

When they are rooted and ready for planting, let the soil to be used consist of five parts loam, one part well-rotted cow manure, and one part sand. Whether pots, boxes, or the bench is used to plant them in, do not plant deeper than they were in the sand, and, when planting in the field, do not plant deeper than they were in the house. Again, when benching them in August or September in the house, do not plant deeper than they were in the field, for the reason that the stem above and below ground is as different as the inside and outside of one's cheek. As we are guarding the plants against stem-rot, we must not deviate from this rule of planting, for, should the plants be set deeper in the house than in the field, the soil old, the manure spongy, and possibly a dark spell of weather and too much water at the base of the plant, stem-rot will prevail to a greater or less extent. When the Carnations are ready for planting in the field, the ground should be so mellow that only the hands are needed in planting, but if too hard or lumpy use a trowel; by so doing, if the ground on the top is dry, it is quickly removed, and a hole for the plant made in fresh soil. Be careful to cover the roots with some of the damp soil. If the work is well done, not a plant should die. Stir the surface of the ground frequently with a hoe, and pinch the shoots so as not to allow any buds to form. By the third week in July most of the plants should be well furnished, and may be let alone until lifting. In lifting be careful to save all the roots possible, for the reason that, if some are injured or broken, nature will just as surely sacrifice a proportionate part of its leaves to maintain a balance.

Planting as early as July is advocated by some of our leading growers, some giving as their reason that the plants become better established, and others giving no reason, but merely claiming that it is advisable. I advocate early planting for some varieties, such as White, Pink, and Red Lawson, Lady Bountiful, Governor Roosevelt, Enchantress, Glacier, Queen Louise, Golden Beauty, Estelle, and White Cloud. Other varieties, like Flamingo, Mrs. Patten, Guardian Angel, Morning Glory, Boston Market, Nelson Fisher, Prosperity, Harlowarden, Mrs. Crane, will do better if planted a month later. Of course, the cultivator must use his own discretion. If the plants have done well, and are well furnished with growths, it is desirable to plant early, as they get better established before commencing to bloom, and there is danger in leaving them out late, as wet weather may set in, and the plants will then make soft growth, and be more liable to be attacked by the rust fungus. Set the plants eight to ten inches distant from each other each way in the bench, and keep the atmosphere close and the plants shaded for a few days, until root action has commenced. Afterwards afford plenty of air, keeping the glass quite clean, in order that all the sun and light possible may reach the plants. Keep an atmospheric temperature of 55° to 60°.

Various kinds of benches are in use, but I believe an ordinary wooden bench made 6 inches deep will prove to be the most useful in England. It should be well limewashed before using. For supporting the plants it is best to run three or four tiers of wire in between the plants the full length of the bench, tying thin twine across in between the plants, so that each plant being separate, the air can get in between them. No tying of the plants is necessary; keep the soil stirred on the top by a small rake to prevent the growth of moss. Keep the plants well disbudded, and you will obtain a continuance of bloom from September until the following July. The soil used may be the same as that recommended for young stock, except that a little bone meal may be added.

Young men—you who are working and educating yourselves in this great work—it is in your interest that my thoughts have been directed, and I shall be glad to answer any questions and freely impart my knowledge either as to sorts to grow or how they can be best managed. We have varieties measuring 4½ inches across, with a good stiff stem 18 inches long, and everyone must admit who sees them growing here that "Malmaisons" cannot touch them. *Walter E. Calvert, Brampton, Ontario, Canada.*

VIBURNUM RHYTIDOPHYLLUM.

Our artist suggests that this name was given after dinner, but as wrinkles (*rutis* Gr.) disappear at these functions, we content ourselves with saying that the name applies to the coarsely wrinkled foliage, though the very similar Greek word (*ruton*), in the sense of a cup, which cannot be placed on the table until it has been emptied, lends support to our artist's suggestion! In the very remarkable *Hortus Veitchii*, published by Messrs. James Veitch & Sons, the following description is given:—"A very striking shrub of an unusually promising nature, with large, broadly lanceolate leaves, strongly nerved on the upper surface, covered beneath with dense woolly tomentum. The branches terminate in corymbs of yellowish white flowers (the corymbs) 7 to 8 inches across. Plants raised at Combe Wood, from seed collected in China, have proved perfectly hardy."

In the *Journal of the Royal Horticultural Society*, vol. xxviii., p. 63, Mr. James H. Veitch also alludes to this species and gives an illustration, fig. 23. Our own representation, fig. 167, shows how greatly the plant has improved under cultivation. The plant was introduced to the Veitchian nurseries by Mr. E. H. Wilson, and is certain to be appreciated by lovers of ornamental shrubs.

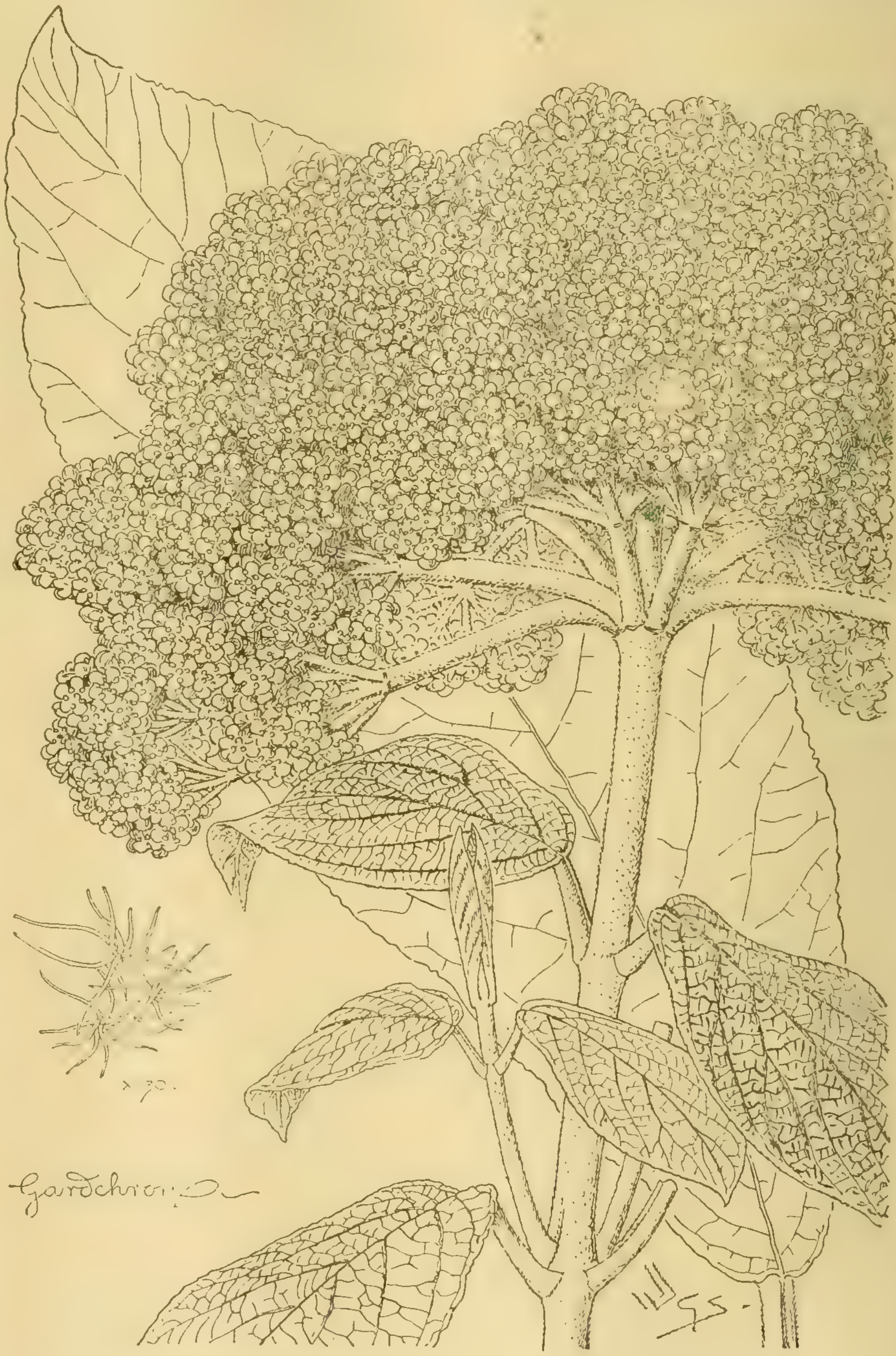


Fig. 167.—Viburnum rhytidophyllum, flowers yellowish-white.

NOTICES OF BOOKS.

My Garden. By Eden Phillpotts, *Country Life* Office.

We must own to feeling a little preliminary prejudice when we were called on to express our opinion on another gardening book. When the number of such publications is remembered, such a feeling may be excused. From the time when the late H. A. Bright wrote in these columns his "Year in a Lancashire Garden" till the present time we have been swamped with similar productions, comparatively few of which have equalled their prototype. Parsons, poets, novelists, ladies, and people with nothing particular to do have all entered the lists. Some of their lucubrations would have found a "cenotaph" in the waste-paper basket but that that basket is by no means an "empty tomb." Some are placed on the topmost shelves to repose in undisturbed dust. Some are placed within easy reach for reference or refreshment of spirit. How many of these books will survive even a decennium we cannot tell, but it is pretty certain that most of them will have sunk into oblivion before that period is reached. Among novelists' productions, Mr. Rider Haggard's *A Gardener's Year* occupies a high position as a garden-book proper, and we shall long treasure the memory of R. D. Blackmore as an authority on Pomology. In which category are we to place Mr. Eden Phillpotts' new book? That is a question which will be better answered a few years hence, on the principle that it is safer to defer prophecy till its fulfilment is at least in sight. All that we can say at present is that the reader will find its light, graceful, withal discursive style attractive and suggestive, which is just what a garden should itself be. The author admits that he knows but little concerning horticulture, but the book itself shows that he knows more than he says—else why did he write it? We cannot always see eye to eye with him. When did reviewer and reviewed see things in the same light? We demur to the statement on well-nigh the last page that gardening is not an intellectual pursuit, but assuredly that is the fault of the pursuer, not of the object of his attentions. We ought in fairness to add that the author immediately qualifies what he had said in a previous line by saying that it can be conducted in a very intelligent manner, as, indeed, it frequently is. We are not without Japanese catalogues, as the author says he is, but it is not unlikely this assertion will ensure his reception of some. We dislike the formal garden (he so much admires) when it is out of place and incongruous as much as we like it when it is in harmony with the surroundings. Neither do we share the author's dislike for butterflies, though we admit we don't like the caterpillars in the vegetable quarters. We can sympathise with the author's scepticism about the Cucumbers, for once upon a time, now long ago, we were the victims of a hoax. Photographs may, or may not, be true representations of facts. In the case we speak of they were made to participate in a fraud, for, as we learnt afterwards, some of the fruits had been tied on to increase the apparent harvest before submission to the veracious camera. Whilst the professional gardener will find a few hints in the book, as every observant gardener does, or should do on all occasions, the novice and the amateur will find more, and conveyed, as we have already said, in most agreeable fashion.

That the writer is not a professional horticulturist is evident from his allusions to "Professor" Nicholson, and from his complete disregard of the usage which ordains the use of capital letters in some plant names and forbids their employment in others. But these are mysteries in any case, not unfrequently even to experts, and there are so many anomalies that it becomes not those who live in glass-houses to cast stones in the direction of other people's tenements. Besides, these trivialities (did not Linnæus himself call them "nomina trivialia"?) do not interfere in any way with our enjoyment of the author's descriptions of his rockeries and their tenants. Irises are special favourites with him, and some good cultural hints are given, which will be serviceable to cultivators of these lovely flowers. That he sometimes talks around his plants rather than of them is no defect in such a work as this. It makes pleasant reading, and, if further information be wanted, the author tells where it is to be obtained. We feel that we, too, have been writing round rather than of this book. We plead guilty. We have been led away by the author himself. We will strive to make amends by advising all who delight in plants, and who like to hear about them, to make themselves the possessors of this fascinating book.

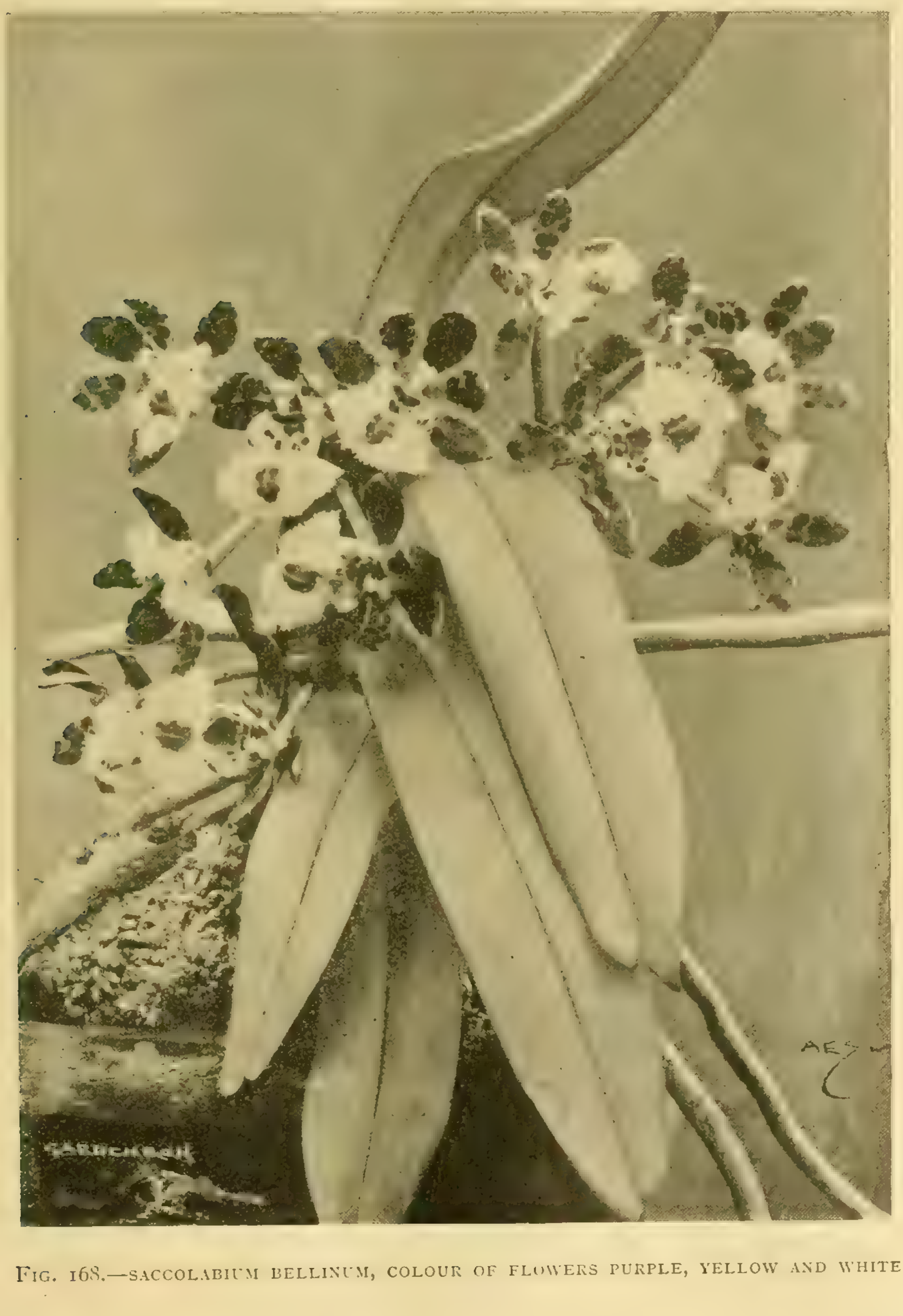


Fig. 168.—Saccolabium bellinum, colour of flowers purple, yellow and white.

SACCOLABIUM BELLINUM.

The beauty of the specimen of Saccolabium bellinum which recently flowered in the Royal Botanic Gardens, Kew, and of which we give an illustration (fig. 168), suggests that it is a plant which ought to be more frequently represented in collections. It is of dwarf, compact habit, and produces flowers of good size and great beauty. The sepals and petals are yellow, blotched with chocolate purple. The singularly-formed pilose labellum is white with an orange-yellow coloured disc and some purple spotting.

The species was discovered by Boxall in Burmah in 1873, and is the finest of its section, which includes S. calceolare and a few other smaller species. Saccolabium bellinum does not require a stove. It thrives well in an intermediate or Cattleya-house.

LEAVES FROM MY CHINESE NOTE-BOOK.

Vegetation of Sungpan and the Kungala Pass.

(Concluded from page 403.)

Other herbs in flower were species of Caltha, Parnassia, Corydalis, Erigeron, Swertia, Pedicularis, Ranunculus, Allium, Aster, Bupleurum, Veronica, Astragalus, Adenophora, Sedum, and Saussurea, with Vicia cracca, Epilobium augustifolium, Hieracium umbellatum, Polemonium cœruleum, Taraxacum officinale, Carduus crispus, Polygonum aviculare, and various Composites and Labiates. In ripe fruit I gathered Primula tangutica. Compared with the Alpine meadows around Tatien-lu the wealth in species was limited, but in mere numbers and intensity of colour the flora of the Kungala Pass was not one whit less rich and fascinating.

The Meconopsis.

At 11,500 feet, amongst scrub and long grass, I stumbled on the first plants of Meconopsis integrifolia, and immediately afterwards Meconopsis punicea. As if to assure me of its identity, a couple of plants of this latter species were found in flower. Now, since I had travelled nearly 600 miles in search of Meconopsis punicea, guided solely by the following scrap of information, culled from a label on a specimen of this plant preserved in the Kew Herbarium: "Potanin, China borealis, Prov. Szechuan septentrionale, '85," I will leave it to the reader to imagine and appreciate my intense delight. From 12,000 feet to the head of the pass (12,200 feet) Meconopsis punicea was fairly abundant. The capsules were just ripe, and a rich harvest of seed rewarded the day's labour.

[M. integrifolia was figured in our columns in Oct. 1, 1904, and M. punicea in Oct. 22, 1904.]

It was 6.10 p.m. before I could tear myself away from this pleasant region. A full moon lent her aid, and at 9.50 p.m. we reached our lodgings at Pei-mu Chiao, tired out but satisfied. Thus ended my trip to the Kungula Pass and the quest of the scarlet Meconopsis.

Conclusion.

As the title of these articles indicates, nothing like finality was intended, nor has any been attempted. The flora of China, like the country itself, is immense. In ornamental trees, shrubs, and herbs, suitable for outdoor cultivation in the British Isles, China is the richest country in the world. Our indebtedness to China may in a measure be realised if an imaginary attempt be made to expunge from our gardens all the plants she has given us.

There are many Chinese plants in cultivation in this country that the lay mind wots not of, but not for one moment must it be supposed that the "Flowery Land" is in any sense exhausted of her treasures. To the recently completed *Index Florae Sinensis*, Sir William T. Thiselton-Dyer contributes a historical note, from which I extract the following: "The present enumeration contains 8,271 (species), of which 4,230 are endemic, or not known to occur outside the Chinese Empire. The most moderate estimate cannot put the whole flora as containing less than 12,000 species." Those qualified to judge will agree that Sir William's estimate is by no means an exaggerated one. The vast collections made by Dr. Henry have not yet been fully described. Collectors for continental herbaria have sent much which remains undetermined, and my own collection of over 5,000 species remains with scarcely a tithe worked out.

[Those of the Conifers that are in cultivation have been described and figured in these columns from specimens put at our disposal by Messrs. Veitch, whilst a complete list, together with the descriptions of several new species not yet in cultivation, was laid before the Linnean Society by Dr. Masters recently. In addition numerous species of Primula and other plants have been described and figured in these columns by Mr. Hemsley, Mr. Duthie, and others.]

In this series of articles, commenced in this journal over a year ago, I have endeavoured to give some account of the vegetation as it came under my observation. I have told of the sub-tropical nature of the Yangtze-Valley flora; of the principal crops; of the rich temperate region, with its wonderful variety of trees and shrubs; of the uplands, with their wealth of herbs, and the fascinating Alpine regions of the Chino-Tibetan borderland, with its savage untrodden mountain ranges crowned with perpetual snows. In short, I have attempted, largely by means of long lists of what I fear have often been unintelligible names, to throw on a screen, as it were, a few bold outlines, and have left it perforce to the readers to fill in the necessary details, and so complete the sketch. *E. H. Wilson.*

[The vote of thanks that will be unanimously awarded to our energetic contributor, hearty as it now is, will assuredly gain in intensity as time in its course enables us to appreciate the amount of indebtedness that gardeners and botanists owe to the ability of Mr. Wilson and the enterprise of Messrs. Veitch.—Ed.]

VEGETABLES.

BROCCOLI AND CAULIFLOWERS.

With the many excellent varieties, it is now an easier matter than formerly to produce a supply of these vegetables all the year round. The less easy time is possibly during the winter months, when the plants develop very slowly. Veitch's Autumn Giant Cauliflower last season produced nice "heads" up to Christmas, but White Cape was in cutting at the same time, and continued considerably longer than did Autumn Giant. Immediately the supply of these was exhausted from a sowing made on March 20, Veitch's self-protecting Broccoli was turning in, producing firm and compact white "heads." This is a very valuable variety and continues a long time in use, providing the weather is not too severe. From plants raised by a successional sowing made about the middle of April, cutting may be continued even for some time longer. It is during February and March that it is sometimes difficult to obtain this vegetable, for afterwards many varieties run the race together. For cutting during February and March it is well to plant a batch on a somewhat sheltered border. I have been successful with Main Crop and Veitch's Fine Spring White. In each case the foliage completely folds over and protects the snow-white "heads." Being of a hardy constitution and close in texture, these varieties are enabled to withstand severe frosts. For supplying late crops of Broccoli I prefer the varieties Model and Late Queen; these are neither coarse in texture nor large in size. They furnish a highly, but not too strongly, flavoured vegetable which is greatly enjoyed. To prolong the season of these two varieties it has been my practice for some years to make a later sowing than is usual—namely, on or about June 7. From this sowing I always get small, but excellent, heads, which continue the supply three weeks longer than the general sowing would do. These late plants need to be afforded an exposed, sunny position and good soil. During severe winters, when other varieties have suffered, these late plants have remained unhurt. They are planted 15 to 18 inches apart, and a slight dressing of nitrate of soda is applied between the plants in the spring months.

A sowing is also made under glass during January of Veitch's Pearl Cauliflower, the plants being subsequently pricked off into other boxes, and when ready and the weather favourable planted out in well-prepared rich ground. This variety when so treated will frequently produce firm, pure white heads, at the same time that late sown plants of Late Queen are in use. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

KEW NOTES.

The Greenhouse.

A large number of climbers on the roof and clothing the pillars of this house are just now in flower. Near the centre Lonicera etrusca var. superba is flowering freely; the flowers are pale yellow, with a tinge of purple on the outside, the flower heads are borne several together on long twining branches. A fast grower, it is a splendid plant for furnishing the roofs of large conservatories, and, moreover, being deciduous, it does not in winter shade the plants beneath. L. sempervirens and the variety minor will be found more useful in houses of smaller dimensions. The flowers are bright scarlet outside and yellow inside, leaves deep green, glaucous beneath. A North American species, it continues to flower for several months. The white flowers of Solanum jasminoides, mingled with the foliage on long trailing stems, is worthy of notice. In favoured districts it will survive the winter outside, but at Kew it requires protection. The pendent flowers of Fuchsias make them ideal subjects to train up the roofs of greenhouses. Besides F. macrostemma and F. simplicicaulis, several of the garden varieties are at present clothed with flowers.

The long, slender, twining stems of Tropæolum pentaphyllum are clothed with small digitate leaves and tricoloured flowers, having a purple calyx, green limb, and vermilion petals. Asparagus retrofractus arboreus is a vigorous and free-growing plant; several of the stems are fully 15 feet in length, much branched, and thickly clothed with bright green foliage. Mitraria coccinea is growing and flowering freely, planted out in a well-drained bed of sandy peat. In the centre of the same bed Datura Knightii has opened the first of its large double white flowers. Pentapterygium serpens is an interesting Himalayan shrub. The numerous red flowers hang from the under side of the branches. Strelitzia Reginæ, the Bird of Paradise flower, is the most beautiful species of the genus; it does better planted out than in pots. The brilliant orange and purple-coloured flowers last a long time on the plants. The pretty little Australian evergreen twiner, Sollya parviflora (Drummondi), flowers over a long period. It is covered with small blue flowers, and is also producing seeds freely. Trained on twiggy sticks, as it was in Messrs. Clibrans' group at the Temple Show, it is very pleasing. Jacobinia magnifica var. carnea makes a very useful plant in a 6-inch pot grown from cuttings annually. Coleus shirensis continues to produce flower spikes, although they are not quite so numerous and vigorous as earlier in the season. The scarlet flowers of Scutellaria Mociniana helps to add variety to the house. Strictly speaking, a plant for the intermediate house, at this season it may be transferred to the cool house when in flower.

Pimelea rosea is just now at its best, at a season when most of the hard-wooded plants are over. Grown several plants together in 6-inch pots Schizanthus retusus is a mass of rose-coloured flowers, with a large yellow blotch on the middle segment. The annual, Arctotis staechadifolia (grandis), also makes a very useful greenhouse plant in 5-inch pots. Other hardy and half-hardy plants at present in flower are Sweet Peas, Lobelia tenuior, Nicotiana alata (affinis), and Alonsoa Warscewiczii. Amorphophallus Rivieri is a most useful foliage plant for dotting amongst flowering plants. The prettily marbled stem is surmounted with deep green foliage, in shape not unlike an umbrella. *A.O., June 16.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Summer Pruning.—This operation may now be completed. The upper portion of the trees having been done some ten days since, the bottom growths have developed correspondingly, with marked success to the fruit. The trees and fruit gain considerably by having superfluous growths cut away. The shoots should be taken off with a sharp knife, about three to five eyes from the base, taking care to make clean cuts. Apples, Pears, Plums, and Cherries may all be treated similarly at the present time with advantage. There are a few varieties which fruit on the ends of the shoots, but these have been noted and should be remembered when pruning is being done. As soon as the work of pruning is finished on wall trees, the shoots that are left for extension or other purposes should at once be nailed in, or these may get broken, and therefore a season's growth lost. Let a good watering be given the trees when these operations have been finished, and wash the foliage well by vigorously syringing the leaves.

Grafts.—Where these are growing freely, the ties may be loosened. Keep the shoots tied to the rods or stakes, as advised in a former calendar. Remove all root suckers and shoots that may grow below the point where the scion has been inserted as soon as they are seen. If the roots are at all dry, let a thorough watering be afforded, and afterwards apply a mulch with long strawy material. The affording of water to trees should not be deferred until it is absolutely a necessity. Each tree should be considered in respect to its leafage and fruit, soil and position, and the rainfall. When and how to water and in what quantities it should be supplied, are lessons that should be learned thoroughly.

Strawberries should be gathered for preserving as soon as ripe. Viscountess Hericart de Thury is still one of the most appreciated varieties for this purpose. Grove End Scarlet is another variety that finds much favour for jam making. Let supplies of water be given to late ripening varieties, in order to induce the plants to hold out, and the ground should be well mulched in order to check evaporation. Waterloo, "Givon's Late," and Trafalgar are among the best late varieties.

All Small Fruits growing in warm and dry positions will need to be afforded water, and this should be applied late in the afternoon or at evening.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Cymbidiums.—Those who possess plants of the new Cymbidium insigne (Sanderi) should place them at the warmest end of the Odontoglossum house, and keep them well supplied with water at the root, especially such plants as are well rooted in small pots. In such a house the plants grow vigorously, and produce strong flower-spikes, whereas in the warmer houses they make large pseudo-bulbs and fine healthy leaves, but do not bloom so satisfactorily. The recently re-introduced C. Huttoni thrives well in a shady part of the warmest house. The compost that appears to suit these plants best is one of fibrous loam, a little leaf soil, and chopped sphagnum-moss. If a handful of finely broken crocks be mixed with it, it will be an advantage. When potting there is no necessity to raise the plants above the rim of the pot; if the compost is left half an inch below, there will be space to receive water. Such species as C. Lowianum, C. Tracyanum, C. eburneum, &c., also the various Cymbidium hybrids, should be grown in a cool, shady part of the intermediate house. All require large supplies of water at the root during the summer months, and their immediate surroundings should be kept moist at all times.

Dendrobium Victoria Regina (cœlestis) is now flowering in the cool house, and its pretty white and blue flowers are always much appreciated. The plant grows freely when fastened on to a teak raft which has been thinly covered with sphagnum-moss, the raft being suspended horizontally near to the roof glass on the lightest side of the house. Water is afforded by lightly spraying the surface of the moss whenever it becomes dry. Other Dendrobiums of the pedilonum section should be treated in a like manner.

Odontoglossum coronarium.—Recently imported plants should also be wired on to a teak raft in the same way, but when the new breaks commence to root, place the plant in a long, narrow teak-wood basket about 4 inches in depth, cover the bottom bars of the basket with well-dried pieces of Fern rhizomes, and give the plant plenty of well-drained peat and sphagnum-moss to root into. Suspend the plant well to the roof of the cool house, and keep the compost moist during the whole year round.

Odontoglossum hastilabium is a beautiful species, but now seldom seen in bloom. The plant is growing freely, and should be placed in a cool, shady part of the Cattleya house; the few extra degrees of warmth there will assist it to form stout flowering pseudo-bulbs. A good supply of water is necessary until growth is completed.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq.,
Cleveley, Allerton, Liverpool.

Lonicera sempervirens.—For training up the rafters of a cool greenhouse, or covering a sunny wall in the corridor or conservatory, few plants are better suited than this lovely North American Honeysuckle. The terminal clusters of trumpet-shaped flowers which are produced in spring and on through the summer hang in great profusion; the flowers, which are of a brilliant shade of orange-scarlet, with yellow interior, contrast well with the leaves. For use in a cut state for dinner table decoration or other purposes, the flowers are exceedingly useful. A good potting compost for this plant consists of a mixture of loam, leaf soil, and soot, with a liberal addition of coarse sand. The plant when growing should be supplied with copious waterings and occasional applications of liquid manure and soot. Guard against attacks of red spider by frequently syringing the plants.

The Attacks of Red Spider on Foliage Plants.—Red spider is perhaps the most destructive of all insect pests which the horticulturist has to combat. The advent of warm weather is conducive to its propagation, and being so small and confining its first attacks to the under side of the leaves, it is not easy of recognition in its early stages of development, but in a very short time the foliage attacked by it assumes a sickly appearance on the under surface, also the parts immediately over where the insects are at work. Codiæums (Crotons), Alocasias, Marantas, Cordylines (Dracænas) soon fall a prey to this pest if in a dry atmosphere. Red spider is capable of destroying the vitality of the leaves, checking growth, limiting the action of the roots, and converting a vigorous plant into a sickly one. A plant may be unhealthy, but it will not readily be attacked by the insect peculiar to it unless an atmosphere is produced which is favourable to that insect. That red spider thrives in and is encouraged by a dry atmosphere experience has proved, but with a plentiful supply of atmospheric moisture, a temperature that is not higher than the plant requires, whether from fire or natural heat, and thorough ventilation, red spider will not be so troublesome. Water is the principal agent in the destruction of red spider, and should be applied with force to the under side of the leaves. This is best done in the evening, when the sun has gone down, bearing in mind that syringing once or twice is not of any great avail, but should be followed up systematically until the plants are quite clean. Sprinkling the paths and gravel stages with soot water will produce an atmosphere in which red spider will rarely appear. Do not allow any plant to suffer from want of water at the roots. Let there be free ventilation, but maintain a humid atmosphere, and it may be as cool as is consistent with the healthy development of the particular plants.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Pines.—Fruits of the early-forced Queens will now be on the point of ripening. Continue to allow the plants a steady bottom heat, but an increased volume of air may be admitted to the structure, and the atmosphere should be kept less moist than formerly, this latter condition being necessary in order to obtain good flavour in the fruits. If it is found that too many fruits are ripening together, some of the plants may be retarded by placing them in a cooler atmosphere. Later plants that are swelling their fruits should be liberally fed with liquid manure and guano water. When the house is closed in the afternoon the plants will be much benefited by slightly spraying them with clear water. During the early part of the day ample ventilation should be given, and if a "notch of air" be put on in the evening and left on during the night, it will do the plants good. Keep the plunging material round the pots well moistened. Let succession plants be brought into the fruiting house as room is made for them by the removal of others. They have now advanced in growth, and should be given a weak stimulant at alternate waterings. Re-pot any plants that require to be re-potted, before they get root-bound, or this will cause them to suffer a check. Plants required for fruiting during the autumn and winter months should be kept in slightly cooler and drier conditions. Let the suckers be potted on as they become ready, and plunge the pots in a hotbed composed of leaves.

Fruit Trees in Pots.—Peach, Nectarine, Cherry and Plum trees which have ripened their fruits may now be afforded an abundance of fresh air to prepare them for being placed out-of-doors. It is not wise to put them out too soon, for after the fruit is gathered, the trees need attention to the foliage, which should be kept clean so that each leaf may perform its proper functions. The trees must not be allowed to suffer for want of water at their roots, but liquid manure may be afforded them occasionally. When the wood has become fairly well ripened they may be removed outside. If Plums are wanted for use at a later date, they may be retarded by the freest ventilation, but, at the same time, do not neglect to syringe them well, and frequently, or to supply water to the roots whenever this is necessary.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth
St. Fagan's Castle, Glamorganshire.

The Campanula.—This interesting and attractive genus of plants is already at this season much in evidence in beautifying the "herbaceous border" or the "wild" places in our garden. The forms and colours of the Campanula are so much diversified that they can be used freely without fear of monotony, and are in every way invaluable to the successful arrangement of a real mixed border of hardy flowering plants.

Not the least beautiful and useful of the Campanulas are the different varieties of the Canterbury Bell, though, unfortunately, their period of blooming is very short; if, however, pains are taken to go over the plants when the flowers are past and remove the seed pods, a new flowering season will be secured three or four weeks later. The Canterbury Bell requires treating as a biennial, and seeds should have been sown earlier in the year, but nearly all the perennial ones may be sown now either in boxes or in the open ground. The preferable plan is to sow in boxes, pot up in autumn, and winter the plants in frames, with the object of planting out in spring.

Campanula pyramidalis is a splendid perennial for the border. It loves a half-shady, moist nook, with plenty of good, light soil: its tall, fleshy flower stems will then reach 5 or 6 feet high. Both the blue and white forms are admirable for giving height to borders in conjunction with Michauxias, Delphiniums, and Hollyhocks. For using in large vases in a cut state they are indispensable. The varieties of C. persicifolia, especially C. p. maxima (a giant form), C. p. cornata cœrulea, and C. p. c. alba, are admirable for borders, and are amongst the best and finest of the tall-growing sorts.

C. platycodon grandiflora is another splendid plant for the hardy flower border: it likes a light, dry soil, as its fleshy roots are liable to decay in wet soils. The plants grow to about 18 inches to 2 feet in height, and bear very stately blue flowers. Grown in bold clumps, C. rotundifolia (the wild Harebell) is very pretty. It is the best of the small flowering species, though for variety C. alpina and C. primula are deserving of cultivation. There is also C. isophylla, a very lovely Italian species, which is charming for the rock-garden or for a dry wall, or for even the front of a border, if a part is particularly prepared for it by draining and placing light, sandy soil for its roots, and some loose stones for it to cover. C. van Houttei, bearing larger flowers than almost any species, is very handsome and desirable, and should be in every border, as also should C. cordata, C. petiolata, C. glomerata in sorts, and the light-blue C. elatine, nor should the pretty C. nitida and its varieties be forgotten.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Seakale.—Growth now has advanced far enough to make certain of thinning to one crown only on each plant. This is essential to obtaining the best produce. If the plants show any sign of weakness apply a sowing of nitrate of soda in moderate proportions during showery weather. Keep all weeds in check by hoeing the ground deeply.

Rhubarb.—Plants intended for forcing should not be further drawn upon, it being necessary for the crowns to develop to the highest degree possible. If the plants are young, a liberal mulching of dung should be given, and if the best possible results are required, plenty of liquid manure may be also afforded.

Mulching.—Many crops should now be top-dressed either with well-rotted manure or litter. In doing such work time is profitably spent. Peas and Beans stand first in need of plenty of long litter placed over their roots. Onions that are being grown to large specimens should have a layer of horse-droppings put an inch deep over the whole surface of the ground; less water will then be required, and a better result obtained. Watering on the surface is very often a source of evil instead of good, as it tends to close the pores of the soil, thus excluding the air. The surface becomes caked in consequence when the sun has shone upon it for a few hours. Mulching prevents this condition, being open in its character, and not readily sealed up.

Salads.—During the next two or three months small saladings will be somewhat difficult to get in first-class condition, and this will be much more apparent on light soil containing an excessive quantity of sand or chalk. Select the coolest border for sowing seeds of such things as Lettuces, Radishes, Endive, Corn Salads, etc. Soak the ground well with water the day before sowing, which is far better than watering after sowing. Protect the seeds from birds by securely netting the seed bed. Sow once a week at this season in small quantities.

Carrots and Turnips.—Together with the salads, little sowings should also be made of Carrots and Turnips, but it will be useless to sow Carrots much later than this date, as they will not be likely to mature. A small sowing should be made of Globe Beet, which will be useful in the autumn.

Celery.—The plants raised from the latest sowing of Celery should be planted without further delay, and a good watering be given at the time of planting. The earliest plants will now require all side growths removed, and a top-dressing of any well-known fertiliser given to quicken growth. Top-dress the plants intended for exhibiting, and also where papering is used for blanching purposes in preference to soil. It is astonishing how quickly the roots of Celery take hold of top-dressings. Celery is a thirsty plant, and should be afforded water in abundance. Sow a sprinkling of hot lime in the lines in the evening, so as to lessen the number of slugs, which, if allowed, would soon injure the stems of the plants.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	June 30	Windsor and Eton Rose & Hort. Show.
TUESDAY,	July 3	Nat. Amateur Gard. Assoc. Conversazione. Harrow Flower Show. Sutton and District Rose Show.
WEDNESDAY,	July 4	Hanley Park Fête (2 days). Croydon Flower Show. Tunbridge Wells Flower Show. Lee, Blackheath, and Lewisham Flower Show (2 days).
THURSDAY,	July 5	Nat. Rose Soc. Exh. at Regent's Park. Nat. Sweet Pea Soc. Show at Roy. Horti. Hall, Westminster.
SATURDAY	July 7	Soc. Franc. d' Hort. de Londres meet. German Gardeners' Soc. meet.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63 0°.

Actual Temperatures:—

London.—*Wednesday, June* 27 (6 p.m.): Max. 73°; Min. 54°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 28 (10 a.m.): Bar., 30 0; Temp., 67; *Weather*—Overcast.

Provinces.—*Wednesday, June* 27 (6 p.m.): Max. 71° London; Min. 56° Liverpool.

SALES.

WEDNESDAY—

Palms, Plants, Standard Bays, Ferns, Cycas revoluluta, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—

Choice Imported and Established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Potato Disease. Much uncertainty has hitherto been felt as to the precise manner in which the outbreak of the disease occurs, and as to the causes of the sudden and rapid manner in which it devastates our fields. Of course the fungal origin of the mischief is now no longer doubted, even by those growers who were wont in years gone by to attribute the disease to any cause rather than the true one. Hitherto the general impression has been that climatical conditions, occurring at a particular season, favoured the rapid development and increase of the fungus and promoted the germination of its spores, and this is true. But where were the spores before? Whence did they come? How is it that they develop so suddenly and spread with such rapidity? At one time it was considered that certain "resting spores," the product of sexual interaction, remained in the tubers or sets throughout the winter, ready to burst into activity when the proper time came. But the "resting spores" which were observed were afterwards found to belong to another species altogether. Be this as it may, we are all familiar with brown spots and discolourations seen in Potatos when cut open, even when outwardly they present no sign of disease. These have been figured in our columns on various occasions, and were carefully observed in the experiments conducted at Chiswick under the auspices of the Scientific Committee many years ago.

A series of experiments made by Mr. Massee at Kew, the results of which are published in the last number of the *Kew Bulletin*, No. 4, 1906, go to show that these spots are connected with the presence of spawn which has remained alive during the winter, and which is consequently called "hibernating mycelium." Some spotted tubers were grown with all due precautions. Those that were placed under a bell-glass in conditions of high temperature, dull light, and much moisture, showed the first outward indication of the fungus when the shoots were six weeks old, and a fortnight later the plants were blackened and destroyed by the fungus. Three other plants from the same batch of tubers were grown in a cool, well-lighted, dry house, and showed no external trace of disease at the end of two months. One of these three was then removed to the warm house and placed under a bell jar. Within nine days that plant succumbed to the attacks of the fungus. A second plant was treated in the same manner, and with the same result. The third was allowed to go on growing in the cool house for thirteen weeks, and at the end of that time remained perfectly free from *obvious* disease.

Similar observations, with identical results, were made with Potatos affected with leaf-curl. It may then be taken as certain that the spawn remains latent in the tubers all the time the conditions are not favourable to its development, but that it starts into activity when favourable circumstances compel it to do so. This sudden renascence accounts for the first outward appearance of the disease, which rapidly spreads by the subsequent dissemination of the spores.

Our Supplementary Illustration.—In no class of flowers is it easier to effect crosses between genera and species than in the natural order Orchidaceæ, which fact has enabled the hybridist to blend desirable characteristics of the one parent with those of another. Thus the beauty and elegance of one flower can be intermingled with the substance and size of another, and this is seen in the beautiful Brasso-Cattleya "Mrs. Francis Wellesley," the offspring of the big-lipped Brassavola Digbyana and Cattleya Luddemaniana. Although the first-named parent has before given us some flowers of very large size, this variety is quite the largest of its class, for it measures over 11 inches across, while in addition the colours are exquisitely displayed and of very delicate tinting, making it a flower of great beauty. The sepals and fringed petals are of a silver white shade, tinted a faint lilac-rose. The mid-rib of each segment is white at the base. The finely fringed lip is over 4 inches across. The disc is primrose-yellow, the front being a soft shade of rose. It was shown by Francis Wellesley, Esq., at the meeting of the Royal Horticultural Society, on April 17 last, when it received a First Class Certificate.

South-Eastern Agricultural College.—We are informed that the Right Hon. Earl Carrington (President of the Board of Agriculture) will open the new buildings at the South-Eastern Agricultural College, Wye, and distribute the Diplomas and prizes, on Wednesday, July 18, at 3.15 p.m.

Flowers in Season.—Messrs. R. Veitch & Son, of Exeter, send us a large consignment of cut flowers of various ornamental shrubs—all of which are beautiful in their way, but mostly well-known, so that the mere mention will suffice:—

Spiræa Foxi is an erect shrub with slender, golden yellow branches, glabrous, oblong-acute leaves, slightly toothed near the apex, and tapering at the base into a short stalk. The very numerous small white flowers are in terminal, much branched, flat corymbs. In the *Kew Hand List* the name is given as synonymous with S. sorbifolia, but the present plant is very different in its characters from that species, being more like S. callosa (syn. S. japonica) of which it is probably a variety.

Cytisus Schipkaensis.—An attractive leguminous shrub with dense, virgate, slender, ascending branches, small trifoliolate leaves and heads of white, pea-shaped flowers. A capital plant for the rockery or shrubbery border.

Ononis fruticosa.—An erect branching shrub with wiry stems, trifoliolate leaves with linear, coarsely serrate leaflets, and terminal racemes of rosy violet flowers. A charming plant for the rockery or the front of the shrubbery.

Robinia hispida macrophylla has numerous rather large pea-shaped flowers of a rosy violet colour. The foliage is pinnate with oblong leaflets.

Olearia macrodonta.—One of the best of its class; its boldly toothed leaves, creamy on the under surface, and its branching panicles of small white flower-heads are very striking. It is quite hardy.

Swammerdamia antennaria.—Why do people have such names to be inflicted on unoffending plants? This is a Composite shrub with densely set, ascending branches, small, thick, obovate, green leaves, tapering to a short stalk and close panicles of small white flower-heads.

Ozothamnus rosmarinifolius.—A shrubby Composite with loose slender branches, linear leaves deep green above, creamy white beneath, and with incurved margins. The white flower-heads are small, very numerous, crowded into masses at the ends of the branches.

Escallonia pterocladon.—A very pretty shrub with slender, four-sided branches, slightly winged at the corners. The small leaves are obovate, acute, slightly glandular-serrate, the tubular white flowers arranged singly in the axils of the leaves at the ends of the branches.

E. Langleyensis × is the beautiful hybrid raised at Langley by Mr. Seden. Its slender branches, crowded with deep rose-coloured flowers, are very attractive.

E. exoniensis ×.—A hybrid with the foliage of E. macrantha, and racemes of white, tubular flowers, flushed with pink.

Abutilon vitifolium.—The vine-like leaves and large pale lilac mallow-like flowers are delightful. If the gardener will look at the under side of the leaves with a pocket lens, he will find an additional attraction in the numerous white, star-like hairs with which the leaves are studded, especially on their under surface. Figured in the *Gardeners' Chronicle*, August 26, 1899, p. 171.

Calycanthus macrophyllus.—A near relative of the old Carolina alspice.

Viburnum dilatatum.—A near ally of our own V. lantana.

Messrs. Stansfield, of Kew, near Southport, send us a specimen of a hybrid Calceolaria with yellow flowers, sprinkled with reddish dots. The plant is stated to be perfectly hardy, and bears a close resemblance to one we had occasion to mention recently.

From Mr. Smith, of Newry, we have received specimens of the curious Distylium racemosum, a shrub with flexuose branches, alternate, shortly-stalked, leathery, oblong, acute, glabrous leaves, dark shining green on the upper surface, paler beneath, about 2 inches long by half an inch in breadth. The flowers are borne in axillary racemes half the length of the leaves, the flower stalks and oblong bracts covered with brown, stellate, membranous scales. The flowers, about half an inch long, have a calyx of five oblong sepals detached or slightly coalescent at the base, no petals, five free stamens hypogynous or very slightly perigynous flat filaments continuous with the ovate, acute, lobed, purple anthers, which open longitudinally; ovary ovoid, flattened, densely tomentose, 2-celled, with two long purple stigmas. The number of the parts varies a little in different flowers. The plant is allied to the Hamamelids, and with Bucklandia, Corylopsis Parrottia, and some others forms the curious order Hamamelidaceæ, which some merge into the Saxifragaceæ, as if that group were not already sufficiently polymorphic. For those interested in hardy shrubs this plant, a native of Japan, will have attractions, as it is not only of pleasing appearance, but curious in structure.

KEW BULLETIN.—The fourth number for 1906 has been issued. Its varied and interesting contents will secure for it wide appreciation. Botanists in particular will rejoice at the publication of so many new species, and all will be interested in the miscellaneous notes which reflect the recent work done in the garden and its dependencies. Mr. MASSEE's note on the perpetuation of the Potato disease will be read with great interest by Potato growers. During winter portions of the spawn or mycelium remain alive and ready to develop when circumstances become favourable.

IRIS SPRENGERI.—Dr. STANSFIELD, of Reading, kindly sends a photograph of the rare species introduced from Asia Minor, and figured in our columns on July 23, 1904. The spreading falls are stiff, oblong, pointed, straw-coloured, with chestnut-brown coloured veins, with a blotch of the same colour at the base; the standards erect, somewhat convolute. Dr. STANSFIELD points out a resemblance to I. Ewbankiana, *Gardeners' Chronicle*, June 22, 1901, fig. 152, and to I. acutiloba (see Lynch, *The Book of the Iris*, p. 104), but says that it differs from both of them in color, &c. With the photograph of Iris Sprengeri Dr. STANSFIELD sends one of the white variety of Iris tectorum. With the exception of a few golden-colored veins on the claw and crest, the flower is pure white. The typical form was figured in our columns, July 6, 1876, p. 37. I. tectorum is a lovely species and quite hardy.

"THE GREEN GATEWAY: A PEEP INTO THE PLANT WORLD," is the title of a new book by Mr. FRANCIS GEORGE HEATH—the first volume of his *Nature's Doorstep* series, fully illustrated: Studies of earth, air, and water, for young people. The Country Press, of Kensington, W., will be the publishers.

ODONTOGLOSSUM CRISPUM. — Mr. HUDSON sends us from Gunnersbury a flower with two sepals, two petals crossing them at right angles, two lips placed diagonally, one broad column evidently made up of two united, one anther, one pair of pollen masses, and a six-lobed ovary with six compartments. From this it appears as though two flowers had become fused at a very early stage and that the coalescence of some of the organs had entailed the disappearance of some others.

HOLIDAYS ON THE CONTINENT.—The tempting little handbook with this title, written by Mr. PERCY LINDLEY, describes the Great Eastern Railway Company's routes and tours. Holland, North Germany, Tyrol, and other charming districts are dealt with briefly, and there are illustrations of some of the most famous scenery. Intending travellers by Harwich, the Hook of Holland and Antwerp should apply for time tables and particulars to either of the company's agents, or to the Continental Traffic Manager, Liverpool Street Station, E.C.

"COUNTRY IN TOWN" EXHIBITION.—Her Majesty the QUEEN has graciously extended her patronage to the "Country in Town" Exhibition, which will be opened by H.R.H. Princess CHRISTIAN in the Whitechapel Art Gallery, at half-past three o'clock on July 5. A series of afternoon and evening lectures is being arranged, dealing with many subjects cognate to the idea that underlies the exhibition, such as gardens, garden cities and suburbs, tree planting in London, bees, and natural history generally. The exhibition will be open until July 19, and admission will be free. The honorary secretary is Mr. WILFRED MARK WEBB, Toynbee Hall, Whitechapel, E.

PRESENTATION.—We are informed that on the occasion of the marriage of Mr. LAURENCE J. COOK, of Messrs. HUGH LOW & Co., on the 12th inst., the staff took the opportunity of presenting him with a handsome "Tantalus," suitably inscribed.

INCREASED WAGES IN KEW GARDENS.—It is reported that the wages of the garden labourers at Kew have been increased from 21s. to 23s. per week dating from Monday last, June 25.

THE WOLVERHAMPTON FLORAL FETE.—The 18th annual floral and musical fête will take place in the West Park, on July 10, 11, and 12, when an attractive and varied programme is offered to visitors. The Park is an ideal place for the holding of such a carnival, and is of itself well worth a visit, the many acres of well-cultured and flower-bedecked grounds being now in the best of condition.

FLOWER SHOWS AT BIRMINGHAM. — The second of the special shows arranged to take place this year in the Botanical Gardens, Edgbaston, will be held on Wednesday next, July 4.

MESSRS. SUTTON & SONS' ANNUAL EXCURSION.—The employees of Messrs. SUTTON & SONS, seedsmen, Reading, with their friends, numbering together eight hundred, had their annual outing on Thursday, June 21. Two trains left Reading for Portsmouth Harbour. The steamer "Duchess of Kent" had been specially chartered for the day, and as soon as all were aboard left for the Isle of Wight, many getting off at Ryde, while the remainder took advantage of a trip to Sandown and Shanklin. All the partners accompanied the excursion, their party including Mr. and Mrs. Martin J. Sutton, Mr. and Mrs. Arthur W. Sutton, Mr. Leonard Sutton, Mr. & Mrs. Martin H. F. Sutton, and Mr. E. P. F. Sutton.

BOTANIC GARDENS, CAMBRIDGE.—We have received, from the Curator, the *Annual Report of the Botanic Garden Syndicate*, June 7, 1906. It details increased activity in experimental work in connection with plant breeding, and a valuable scheme for providing work for respectable unemployed men in winter. In January, the Honorary Degree of M.A., was conferred upon Mr. LYNCH, in recognition of his services to botanic science in the University as Curator of the Botanic Garden since 1879. In the past year the Curator was awarded the Victoria Medal of Honour in Horticulture by the Royal Horticultural Society.

HOME CORRESPONDENCE.

(*The Editor does not hold himself responsible for the opinions expressed by his correspondents.*)

THE THAMES EMBANKMENT GARDENS.—At the present time these gardens, which extend in three sections from near Westminster Bridge to the Temple on the north bank of the Thames, are looking so fresh, and so many improvements have been effected that they deserve a note. The turf especially is in excellent condition, and as a great portion of it has been in existence for over 20 years, it is remarkable that with all the unfavourable influences of a London atmosphere, it should continue so thick and flourishing. Constant attention to summer watering, and autumn or spring assistance with dressings and fertilisers, have alone ensured these satisfactory results, but it is a convincing proof of what can be accomplished in city gardening under the right system. The trees and the shrubs also appear to be flourishing surprisingly for such a dry season, but in their case also the command of ample water supplies, with the judiciously frequent use of this help is the secret of success. Considerable alterations have been effected in the beds devoted to flowering plants, and the results are more satisfactory than they were a season or two since, as bolder and more telling masses are provided. An example of this was shown a week or two ago, when some of the beds were filled with Rhododendrons which afforded some fine floral effects. A few Palms have been introduced, but much more could be done in this direction with advantage, and a few of the more distinct sub-tropical plants would look well in the grass where the shelter is sufficient, and some of the recently planted trees might be removed with advantage and the lines of the shrubberies simplified. The London County Council does no better or more popular work than that devoted to the maintenance of such gardens. How greatly they are appreciated is proved by the large number of visitors. The provision of a band every evening is a great attraction, and it is stated that over 100,000 penny tickets for seats were sold last year. These Embankment gardens on both sides of the Thames, together with the garden at Leicester Square, are now under the superintendence of Mr. Frank Wright, who has had long previous experience in the same charge. *Experientia.*

CELSIA CRETICA.—This charming plant is not so widely cultivated as it should be. Plants will flower from seed with little trouble. But to get the best results plants should be procured from a reliable nurseryman, and planted about one foot apart. The flowers are borne on spikes of about 1½ to 2 feet, and are delightfully scented, of a clear yellow, with deep crimson blotches on the two upper petals, about 1½ inches across. The foliage is of a deep shade of green, which gives great effect to the plant. This beautiful plant does well in deep, sandy soil, and very little moisture, but if given a copious supply of water during dry weather it will repay this by blooming for a longer period. It is quite hardy in this country. *W. F. Glover, Langport, Somerset.*

THE ROSE SHOW IN THE ROYAL BOTANIC GARDENS.—Managers of Rose and other horticultural exhibitions have hitherto had to contend against two serious difficulties: 1, How to keep down the heat in the show tents on a hot day; 2, How to obtain for the visitors even moderately good refreshments which are in any way efficiently served. At the leading exhibition of the National Rose Society, which will be held in the Royal Botanic Gardens, on Thursday next, July 5, an earnest endeavour will be made to meet both these difficulties. In addition to the show tents being well ventilated, the canvas on the outside will be kept constantly moist throughout the day, should the weather prove unusually warm, by means of a steam sprayer, which will be provided and worked by Messrs. Merryweather and Sons. As regards the refreshments, a well ventilated luncheon tent to seat nearly 400 visitors at a time will be provided; while teas can be obtained either in this tent or under the shade of the trees in the immediate neighbourhood of it. When I say that 1,200 teas were recently served to visitors seated at tables under the trees in the Royal Botanic Gardens by the present caterers, the Frederick Hotels, Limited, to the satisfaction of all concerned, there is every reason to hope that the refreshments this year will at all events give reasonable satisfaction. Those visitors who travel to the show by the new railway from Waterloo to Baker Street, will find this route a delightfully cool one. *Edward Mawley, Hon. Secretary, June 27, 1906.*

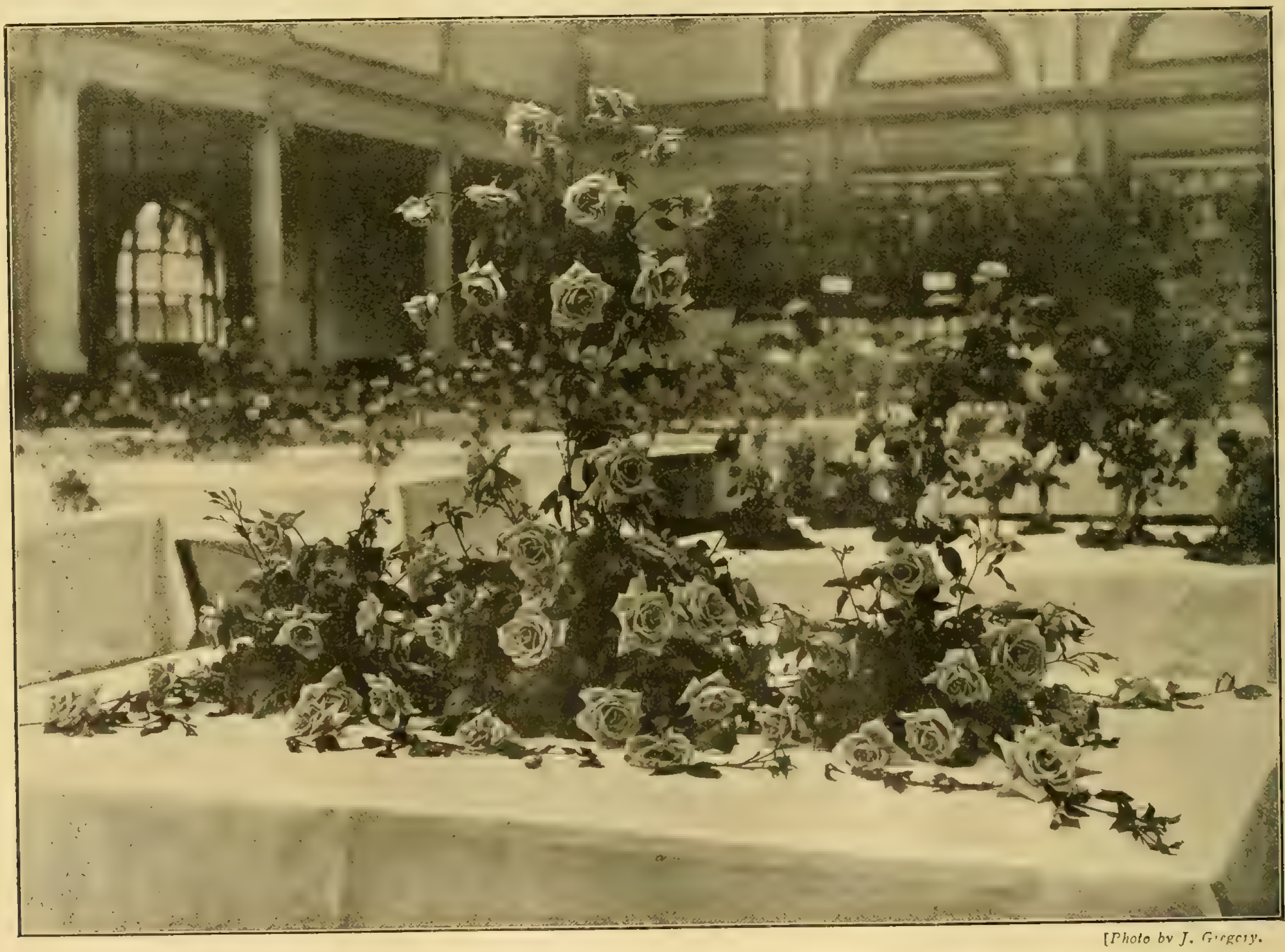
ROSMARINUS OFFICINALIS PROSTRATUS, mentioned by Mr. Arnott on page 381, is found in plenty on the cliffs of the island of Capri, &c., South Italy. It was, I believe, introduced to our gardens by Miss Jekyll. A group of this little Rosemary at the Botanic Garden here was much injured during the past winter, the greater number of the plants dying during the unfavourable weather of the early months of this year, although several previous winters had left them unharmed. Some young examples are now on a portion of a "wall garden," which suits them well, as the position is dry and well exposed to the sun. *D. S. Fish, Edinburgh.*

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 26.—The Society's Hall in Vincent Square, Westminster, was again conveniently full of exhibits on the occasion of the ordinary fortnightly meeting on Tuesday last, but the number of visitors was less than at preceding shows during the past few months. Orchids seem never to lack at these meetings, and on Tuesday the ORCHID COMMITTEE gave the following awards to novelties:—Two First-Class Certificates, four Awards of Merit, and two Botanical Certificates.

The FLORAL COMMITTEE had a large number of groups to inspect, but there were not many novelties of remark submitted for Certificate. The awards consisted of three Awards of Merit, which were given to a double Pæony, an Antirrhinum, and a Rose.



[Photo by J. Gregory.

FIG. 169.—ONE OF THE BEST TABLE DECORATIONS EXHIBITED BY MR. W. HAYWARD AT THE R.H.S. SHOW ON JUNE 20
THE ROSE IS MADAME ABEL CHATENAY.

There were rather more fruits and vegetables shown than there have been lately, but the Committee charged with the inspection of these did not make any award.

At the afternoon meeting a number of new Fellows were elected, and the Rev. Geo. Henslow, F.L.S., delivered a lecture on "Some Remarkable Cases of Adaptation to the Conditions of Life."

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. H. B. May, Geo. Paul, T. W. Turner, C. J. Salter, C. Jeffries, C. Dixon, C. E. Pearson, C. E. Shea, W. Cuthbertson, W. P. Thomson, W. J. James, Jno. Green, J. T. Bennett Poë, H. J. Jones, H. J. Cutbush, R. C. Notcutt, J. W. Barr, Jas. Walker, A. Perry, R. Hooper Pearson, and Jno. Jennings.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, staged a very fine group of interesting and choice Roses. Among them were Mad. Jules Gravereaux (see Awards) and Rambler Rose Goldfinch. This latter variety is a new one, with flowers 1¾ inch across of pale lemon colour, the anthers being of a rich shade of orange and very conspicuous. The foliage and inflorescence are exactly those of a true Rambler, though one of the parents was Celine Forestier, and the variety is likely to meet with appreciation. In addition to these there were flowers of many other good garden Roses, sprays of some choice flowering shrubs, and a group of Pæonies. Among the shrubs there were some exceptionally well-flowered shoots of the golden-yellow-coloured Fremontia californica and the mauve-coloured Abutilon vitifolium. (Silver Banksian Medal.)

Messrs. BEN. CANT & SONS, Colchester, showed bunches of Roses from the open. The flowers were clean and shapely, and of fine colour. We noticed the rich crimson Etoile de France; small but well-shaped flowers of Comtesse Festetics Hamilton, the new pink-coloured single Mrs. O. G. Orpen, Mrs. B. R. Cant, of a salmon-red shade, Antoine Rivoire, Lady Ashtown, Clara Watson, &c. (Silver Banksian Medal.)

Messrs. WM. PAUL & SON, Waltham Cross, Herts., exhibited their new crimson H.T. Rose Warrior, and pot plants of a single lemon-coloured seedling Briar.

Mrs. J. B. TAYLOR, Sherfield Manor, Basingstoke, showed a new strong-growing Rose named after the exhibitor. The petals are pale rose colour, with claret-coloured reverse.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, Middlesex, showed flowers of varieties of Souvenir de la Malmaison Carnations, and two large pot plants of the variety Princess of Wales. (Bronze Flora Medal.)

Mr. F. E. SEYS, Mark's Nursery, Romford, Essex, showed a seedling Carnation named King Edward VII. The flowers were small and of a poor shade of scarlet.

One of the best exhibits of cut Carnations exhibited during the season was shown on this occasion by Mr. C. F. WATERS, Balcombe, Sussex. The flowers were exceedingly good, and they were arranged attractively in receptacles of various kinds adaptable to the stage. Several of the Souvenir de la Malmaison varieties were exhibited conspicuously, and the border and tree varieties were excellent. (Silver Gilt Flora Medal.)

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, displayed vases of Zonal Pelargoniums in a setting of small Ferns, and plants of Ixoras Fraserii and I. macrothyrsa.

Messrs. CANNELL & SONS, Swanley, Kent, set up an interesting group of succulent plants of varieties that are suitable for greenhouse decoration. Many were in flower, while the dwarf Maxillaria pusilla carried both fruit and flowers, the small red fruits being very conspicuous and of attractive appearance. Opuntias, Cereus, Maxillarias, Echinocacti, Euphorbias, and many other genera were represented. Messrs. CANNELL also staged a batch of the new Carnation Duchess of Marlborough, rosy-flaked on buff ground, and a row of Souvenir de la Malmaison Carnations "Newton Don." (Silver Banksian Medal.)

Mr. HENRY ECKFORD, Wem, Shropshire, put up a large collection of Sweet Peas in glass vases on a white table ground. All the choicer and newer varieties were represented, including the salmon-scarlet Miss Willmott, the beautiful orange-scarlet Henry Eckford; Agnes Eckford (new), with flowers of a soft rose-blush shade and having a paler keel and wings. Another new variety is Horace Wright: the colour is indigo blue. It is quite one of the best dark blue varieties of this popular flower. (Silver Flora Medal.)

Miss HEMUS, Holdfast Hall, Upton-on-Severn, made an exhibit of Sweet Peas of the varieties Paradise, rose-coloured, Ice Maiden, white, Yellow Gem, Helen Lewis, and others.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, filled one corner of the Hall with plants of the ornamental silver-leaved Dimorphanthus mandchuricus, the group being completed with an edging of small plants of Hedera helix arborea flavescens.

Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea, showed a mixed group of greenhouse flowering plants. They had some very nice Gloxinias, batches of Lobelia tenuior, Rehmannia angulata, Exacum macranthum, and Streptocarpi, a few hybrid Gerberas, and several hybrid greenhouse Rhododendrons. In another part of the Hall Messrs. Veitch staged a group of hardy flowering plants, Pæonies, Heucheras, Eremuri, &c. (Silver Gilt Banksian Medal.)

Messrs. Jno. Laing & Sons, Forest Hill Nurseries, London, had arranged a large group of Caladiums on the floor of the Hall, such a group as we are accustomed to see at the Temple or Holland Park Shows. The same firm had a small group of choice Codiæums. (Silver Banksian Medal.)

Mr. G. Reuthe, Fox Hill Nursery, Keston, Kent, exhibited varieties of Iris and other border flowers. Among these several bunches of old-fashioned Ixias were attractive owing to their quaint colouring. (Bronze Flora Medal.)

From Messrs. R. Veitch & Son, Exeter, were shown sprays of the less hardy flowering shrubs, including the fragrant Carpenteria californica, with its pure white flowers and yellow anthers, Abutilon vitifolium, Convolvulus cneorum, &c.

Messrs. Jno. Waterer & Sons, Ltd., Bagshot, contributed a group of Kalmia latifolia, dwarf plants, in pots, and very freely flowered. (Silver Flora Medal.)

Mr. Maurice Prichard, Christchurch, Hants., had the pretty Gillenia trifoliata in the centre of his ground group of hardy flowers. On either side were varieties of Iris hispanica and of Delphiniums, and Pæonies. Kniphofia rufa is a very early variety, yellow after fully open, and red before opening. (Silver Flora Medal.)

Messrs. W. Cutbush & Sons, Highgate Nurseries, London, N., made an imposing exhibit of border plants and flowers. Conspicuous among these were Campanula macrantha, of tall growth, Delphinium grandiflorum, Incarvillea Delavayi, Lilium Batemanianum, Lychnis Haageana, Kniphofia caulescens, Eremurus robustus, Hemerocallis fulva, varieties of Pyrethrum roseum, Romneya Coulteri, Irises, &c., and flowers of Water Lilies, with a background of aquatic plants. (Silver Gilt Banksian Medal.)

J. A. Young, Esq., Putney, obtained a Silver Banksian Medal for an exhibit of Pelargoniums.

Messrs. Barr & Sons, King Street, Covent Garden, London, displayed a large assortment of hardy flowers in season, including pans of hardy Nymphæas, of pink and white coloured varieties, Delphiniums in many pleasing shades of blue, Irises, Ixias, &c. (Silver Banksian Medal.)

Mr. Amos Perry, Winchmore Hill, and Enfield, Middlesex, exhibited border flowers in great variety. Conspicuous were varieties of free-flowering single Pinks, Oriental Poppies, Heucheras in variety, Morina longifolia (a Dipsaceous plant, with Acanthus-like inflorescence and Thistle-like foliage), Campanulas, &c. (Silver Flora Medal.)

Messrs. R. H. Bath, Ltd., Floral Farms, Wisbech, exhibited a large number of Pæonies, all of which were well-known varieties. At the back were spikes of Delphiniums, and adjoining was a batch of show Pelargoniums. These last-named plants were well-grown specimens, and they were all carrying a profusion of flowers. (Silver Flora Medal.)

Messrs. Kelway & Sons, Langport, Somerset, exhibited large collections of Pæonies and Delphiniums, very similar to their display at the last meeting of the Society.

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex, staged a nice assortment of border flowers and vases of Sweet Peas, which formed an edging to the exhibit. (Bronze Flora Medal.)

The Misses Hopkins, Mere, Knutsford, Cheshire, displayed a number of hardy flowers and Alpine and rock garden plants.

The Craven Nursery Co., Clapham, arranged a small rock garden planted with appropriate plants.

Messrs. John Peed & Son, West Norwood, London, showed many pans and boxes of Alpine plants.

Messrs. Thos. Cripps & Son, Tunbridge Wells, Kent, exhibited sprays of ornamental foliage of such hardy trees and shrubs as Oaks, Maples, Elms, Beech, Privet, Elders, &c. Intermingled among these were many flowering shrubs and garden flowers. We noticed a vase of the showy Carpenteria californica, and some splendid inflorescences of Phlomis fruticosa. The "fringe tree" Chionanthus virginicus found a prominent place in the group.

Messrs. Geo. Bunyard & Co., Ltd., Maidstone, Kent, showed a large collection of garden flowers—Irises, Pyrethrums, Aquilegias, Poppies, Pinks, Pæonies, &c. (Silver Banksian Medal.)

The Guildford Hardy Plant Nursery Co., Guildford, Surrey, displayed a group of hardy flowers. Great variety was seen in the exhibit, and all the flowers were presented in first-class condition. We noticed a beautiful specimen of the dwarf Rhododendron myrtifolium nanum. (Silver Banksian Medal.)

Messrs. Wm. Bull & Sons, King's Road, Chelsea, showed a stand of English and Spanish Irises in all the best and newer varieties.

Mr. F. H. Goddard, 60, Fawe Park Road, Putney, showed a new blue Verbena named May Goddard.

Messrs. G. & A. Clarke, The Nurseries, Dover, set up a display of herbaceous flowers—Pæonies, Irises, Pyrethrums, Campanulas, Lilies, Gaillardias, Pinks, &c. We noticed a nice vase of Centaurea macrocephala and another of Phlomis Russelliana. (Silver Flora Medal.)

Messrs. R. Wallace & Co., Kilnfield Nurseries, Colchester, exhibited a collection of hardy herbaceous flowers of much merit. The group was very representative of the best things now in season, and they were displayed in an approved manner. We may select Campanula alba grandiflora, Centaurea pulchra major, Iris King of Yellows (shown remarkably well), small plants of Campanula G. F. Wilson, Glaucium flavum tricolor, and Isatis glauca as worthy of especial mention. (Silver Gilt Banksian Medal.)

Messrs. R. Smith & Co., Worcester, exhibited variegated foliage of hardy trees and shrubs, a number of vases containing showy garden flowers, and some beautiful little Conifers of very healthy appearance. We noticed spikes of the curious Rhodiola sibirica in this collection. (Bronze Banksian Medal.)

Messrs. J. Cheal & Sons, Crawley, Sussex, staged a meritorious exhibit of hardy flowers, in which were seen popular and brilliant varieties of most hardy subjects. (Bronze Flora Medal.)

Messrs. Carter, Page & Co., 52 and 53, London Wall, London, showed flowering sprays of a large number of varieties of Fuchsias, and a beautiful display of Cactus Dahlias. The latter were selected for their refined colours and medium size. We noticed the new J. B. Riding, an excellent flower; Violetta, with shade of violet-rose flushed with crimson; Kriemhilda, creamy-white tinted with cerise pink; Butterfly, an attractive flower, with crimson petals tipped with white, &c. (Bronze Flora Medal.)

AWARDS.

Antirrhinum "Cottage Maid."—A fine, bold-flowering variety, with exceedingly attractive flowers, the tube being white, and the upper and lower lobes rose-coloured, with a little yellow shading at the junction of the two lobes. Shown by Messrs. Dobbie & Co. (Award of Merit.)

Pæonia Mons. Chas. Leveque.—A very large, double flower, of pale flesh colour, with a little richer colour towards the centre. Shown by Messrs. R. H. Bath, Ltd., Wisbech. (Award of Merit.)

Rose Mme. J. Gravereaux.—This fine exhibition hybrid tea Rose was shown by Messrs. Paul & Son, Cheshunt. It has long petals of fine form, the buds are pretty, and the flowers have unusual substance; the colour is cream, flushed with pink. (Award of Merit.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), De B. Crawshay, Francis Wellesley, R. Brooman-White, H. Little, W. Boxall, A. A. McBean, G. F. Moore, F. M. Ogilvie, W. H. White, H. A. Tracy, W. Bolton, H. J. Chapman, W. Cobb, R. G. Thwaites, Arthur Dye, H. G. Alexander, H. Ballantine, and Harry J. Veitch.

The magnificent and well-arranged group for which Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander), was awarded the Society's Gold Medal, was a very remarkable exhibit and good at all points. Two of the best, viz., Sobralia Holfordii and Cattleya Whitei splendidissima also secured First Class Certificates, and Sobralia Amesiæ an Award of Merit. The back of the group displayed some splendid specimens of Sobralias, including S. Veitchii, S. macrantha alba and others, the specimens bearing from six to 12 large flowers each. With them were Oncidium macranthum with about 50 flowers; fine sprays of the large white Phalænopsis Rimestadtiana, fine Odontoglossum Uro-Skinneri and others of similar habit. The main feature in the body of the group was a fine set of Cattleya Warscewizii, very profusely flowered, one specimen having 12 blooms and another five large flowers on a spike. With them were Lælia tenebrosa, "Westonbirt variety," a very richly coloured form; Lælio-Cattleya Clive magnifica, L.-C. Martineti, L.-C. Baroness Schröder, L.-C. callistoglossa "Earl Grey," a very handsome form, and other Cattleyas. In the centre was a basket of three plants of the rich crimson Sophro-Lælia læta orpetiana, and behind it the noble white Miltonia "Queen Alexandra," which had previously been awarded a First Class Certificate.

H. L. Bischoffsheim, Esq., The Warren House, Stanmore (gr. Mr. Ellis), was awarded a Silver Gilt Flora Medal for a very extensive group made up principally of finely grown and well-bloomed varieties of Cattleya Mossiæ, showing remarkable variety in the colouring and form of the flowers, that named Countess of Desart being a very brightly coloured and attractive variety. Arranged with the Cattleya Mossiæ were several good C. Mendeli, Lælia purpurata with 16 flowers; L. tenebrosa with 12 flowers; a nice selection of Odontoglossums, including O. crispum, Lehmanni, O. Hallii, and O. odoratum,

J. B. Joel, Esq., Northaw House, Potters Bar (gr. Mr. May), received a Silver Flora Medal for a group containing some excellent specimens of Cattleya Warscewiczii, the flowers of which were very finely developed. At one end was the great specimen of Cypripedium Rothschildianum, "Northaw variety," with a very strong spike of five flowers and a bud, and in the group were several fine Lælia tenebrosa, one specimen having two spikes of five and two of four flowers.

Messrs. Hugh Low & Co., Enfield, were awarded a Silver Banksian Medal for a group in which were a good selection of their fine type of Cattleya Mossiæ and C. Mendeli, one of the brightest of which was C. Mossiæ "Bronze Queen," of good colour and with distinct bronzy orange in the lip. A nice variety of C. Mossiæ alba, with slight pencilling of purple on the lip, was shown, and the rare white forms of both Dendrobium crystallinum, D. Bensonæ, and other Dendrobiums; also Promenæa xanthina, Barkeria spectabilis, Cypripedium Maudiæ magnifica, some very fine C. niveum and Bulbophyllum Lowii of the Sarcopodium section, and resembling B. Godseffianum Hort., which is referred to B. Dearei. In the variety Lowii the flowers have broad yellow sepals bearing numerous dotted chocolate purple lines, narrower petals, yellow with lines of dark purple, and hinged lip, the tip of which is purple and the raised crest yellow.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), showed several very handsomely blotched forms of Odontoglossum crispum, the largest of which was his O. c. Mundeyanum with flowers $4\frac{1}{2}$ inches across, the sepals which were equal in width to the petals, and $1\frac{1}{4}$ inch across. The beautiful flowers had the inner two-thirds of the segments of a light purple colour, the reverse side being also tinged with purple. Two new forms were O. crispum "Terpsichore," with broad sepals and petals, white with the purple tint on the backs showing through and with some large light purple blotches; and O. c. "Medusa," a clear white variety with evenly distributed claret purple blotches on the sepals and petals. Mr. Cookson also showed a flower of the valuable O. crispum Sanderæ in which high cultivation had caused the colouring to spread all over the segments except the tips and margin, and O. ardentissimum "Sibyl."

J. Hubert Grogan, Esq., Slaney Park, Baltinglass, co. Wicklow, sent a good dark form of Odontoglossum Harryanum.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cypripedium Miss Sillem superbum (Godefroyæ × niveum), a pure white flower freely spotted with purple and of good shape.

Messrs. Stanley & Co., Southgate, sent Cattleya Mendeli triumphans, a fine large coloured form; C. M. Harrisii, blush white with purple front to the crimped lip which had a white margin; a nice variety of C. M. Reineckiana and C. F. W. Wigan.

Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), showed a small group of interesting plants, for most of which see Awards.

AWARDS.

First Class Certificate.

Sobralia Holfordi, from Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). The finest of the S. macrantha section and distinguished by its larger flowers, the very broad and finely developed front to the lip, and its clear white centre. The plant is believed to be only in Major Holford's collection, from which it has been frequently noted. Colour rich rose-purple with white centre to the lip. The fine specimen bore 13 flowers.

Cattleya Whitei splendidissima, from Major G. L. Holford. Probably the finest and brightest coloured hybrid of C. Schilleriana, and obtained by crossing that species with a good C. Warneri. Colour clear rosy-purple with the broad, rounded front of the lip finely veined with glowing ruby-purple, the disc being orange and the margin lilac colour.

Award of Merit.

Sobralia Amesiæ (*xantholeuca* × *Wilsoniana*), from Major G. L. Holford. Flowers large and of a delicate buff-yellow tinged with rose. The specimen bore 10 flowers.

Cattleya Mossiæ Mrs. A. Goodson, from H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day). A very remarkable variety with bizarre flowers of good size and shape. The flowers are of an uniform dark-rose colour, but colour suppression leaves the sepals nearly white with some slight rose markings and the greater part of the central portions of the petals also white, the outer edges mottled with rose. Lip crimped, dark rose with yellowish disc.

Odontoglossum Queen Alexandra, var. Carmen (Harryanum × triumphans), from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables). The finest and darkest of this handsome cross which has yet appeared. Sepals and petals heavily blotched with chestnut-red, the sepals only showing the yellow ground colour in a few narrow transverse bars at the margins and tip. Base of the lip dark violet, front white, crest yellowish.

Thunia Marshalliana alba, from Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White). A fine albino of the pretty purplish-lipped species which was also shown for comparison. Flowers in nodding racemes pure white with sulphur-yellow disc to the lip.

Botanical Certificate.

Maxillaria molitor, from Sir Trevor Lawrence, Bart. A singular and distinct Ecuadorean species, originally described by the late Professor Reichenbach in the *Gardeners' Chronicle*, August 27, 1887, p. 242. The habit of the plant is similar to M. grandiflora. Flowers 2 inches across, the petals broad, yellowish cream colour, tinged with purple towards the tips. Petals and lip yellowish, the latter slightly marked with purple.

Houlletia odoratissima, var. xanthina, from Sir Trevor Lawrence, Bart. A pretty, clear yellow form of the fragrant species, which in the type is spotted and tinged with purplish red. Lip cream-white.

Stelis muscifera, from Sir Trevor Lawence, Bart. A pretty little species with semi-erect racemes of many deep-purple flowers.

Cirrhopetalum Amesianum, from Sir Trevor Lawrence, Bart. A dwarf Malayan species. Flowers in umbels, each ¾ inch in length, the cornate lateral sepals uniting in an ovate blade; cream-white with the greater part of the surface spotted and tinged with rose.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman), and Messrs. Joseph Cheal, W. Bates, H. Parr, S. Mortimer, A. Dean, A. R. Allen, W. Pope, R. Lye, John Basham, George Kelf, J. Davis, P. C. M. Veitch, F. Q. Lane, J. Willard, Owen Thomas, and W. Poupart.

A collection of vegetables was shown by Miss M. H. Dodge, Loseley Park, Guildford (gr. Mr. R. Staward). Included were nice little roots of Early Gem and Delicacy Carrots, Early Model, White Milan, and Early Milan Turnips; very large "Favourite" Cabbage Lettuce, a variety described as a cross between Neapolitan and All the Year Round; "Red Braes" Cabbage, apparently a very good, shapely Cabbage, with remarkably small stem; also tubers of seven varieties of early Potatos. These were Midlothian Early, Windsor Castle, Ruby Queen, Duke of York, Early Balfour, Sharpe's Victor, and Britannia. The same exhibitor had haulm with pods of a seedling Pea "James Grieve."

A seedling Melon named Shotesham Park Hero, was exhibited by Miss Violet Fellowes, Shotesham Park, near Norwich (gr. Mr. Lewis Smith). It is a white-fleshed variety, of moderate size, and is described as ripening 10 days earlier than Hero of Lockinge, in same house.

Mr. C. Foster, showed from the Experimental Gardens, Reading College, six punnets of Peas in six varieties. The varieties were May Queen, Ideal, Early Giant, Dwarf Defiance, Thomas Laxton and Little Marvel. These were excellent samples, and the pods of most varieties were perfectly filled. Dwarf Defiance appeared to be a little later than some of the others, Ideal for instance.

Messrs. R. H. Bath, Ltd., Wisbech, exhibited fruits of a large, rough-looking Strawberry, named Kentish Favourite.

MANCHESTER & NORTH OF ENGLAND ORCHID.

June 14.—*Present:* Messrs. E. Ashworth, A. Warburton, R. Ashworth, W. B. Upjohn, J. Cowan, H. Thorp, Z. A. Ward, E. Rogers, A. J. Keeling, J. E. Williamson, W. Stevens, F. Ashton, C. Parker, and P. Weathers (hon. sec.).

There was only a small display of plants at this meeting.

A. Warburton, Esq., Haslingden, received an Award of Merit for Cattleya Mossiæ, var. Julius Roerhrs, a white form closely approaching C. M. var. Wagnerii.

R. Le Doux, Esq., West Derby (gr. Mr. Davenport), was awarded a Cultural Certificate for a handsome specimen of Cœlogyne Dayana.

W. Thompson, Esq., Stone (gr. Mr. Stevens), was awarded a Silver Medal for a nice group, principally of Odontoglossums, &c.

Mrs. S. Wood, Glossop (gr. Mr. Gould), was also awarded a Silver Medal for a miscellaneous group.

Philip Smith, Esq., Ashton-on-Mersey (gr. Mr. Kitchen), was awarded a Bronze Medal.

Messrs. A. J. Keeling & Son were given a vote of thanks.

Amongst other exhibits E. Ashworth, Esq., exhibited Cattleya Mossiæ, var. Wagnerii, var. Queen Alexandra; S. Briggs-Bury, Esq., Cypripedium Lawrenceanum, var. "Sir Trevor"; Mr. S. Allen, a fine plant of Lælia tenebrosa; H. Low & Co., Cattleya Mendeli, var. Colossus. *P.W.*

RICHMOND HORTICULTURAL.

July 27.—The 32nd annual flower show of this society was held on the foregoing date in the Old Deer Park, Richmond. The exhibition was again a success, the number of entries being well up to the standard of former years, and considerably in excess of those of last year. The great feature of last season's display was the wealth of Roses which almost filled one large tent, this year, however, the number of these flowers was considerably fewer. The grand collection of Orchids staged by Sir Frederick Wigan was a notable feature, as was also a magnificent non-competitive group of flowering plants staged by Messrs. T. S. Ware, Ltd. In the fruit classes was seen some splendid produce principally from the gardens of Sir C. Swinfen-Eady.

Groups of Plants.

In the class for a group of plants arranged for effect three exhibitors contested, the 1st prize being awarded Sir C. Swinfen-Eady, Oatlands Lodge, Weybridge (gr. Mr. James Lock). The group contained a very large assortment of flowering plants, but it was too freely overhung with tall sprays of Bamboos, Humea elegans, Trachelium cœruleum, Bougainvillea, &c. The 2nd prize group was shown by Mr. H. E. Fordham, Twickenham. This was an extremely pleasing exhibit. Many well-grown plants of Gloxinias were used in the ground work, with Gypsophila paniculata, species of Lilium and a few Cattleyas and Carnations intermingled among suitable foliage plants.

In the smaller class, occupying an area not exceeding 60 square feet, were seen five displays. The best was exhibited by Sir Fred. Wigan, Bart., Clare Lawn, Sheen (gr. Mr. C. Want). This was a tastefully-arranged exhibit, the background being of Palms, the body of Hydrangeas and Liliums, with Carnations, Orchids, &c., and ornamental foliage plants. 2nd, C. M. Bartlett, Esq., Uplands, East Sheen, with an arrangement consisting principally of foliage plants.

Orchids.—Sir Fred. Wigan, Bart., Clare Lawn, Upper Sheen (gr. Mr. W. H. Young), was an easy 1st prize-winner for six exotic Orchids. He showed a splendid plant of Lælio-Cattleya Canhamiana var. "Marguerite." Epidendrum prismatocarpum and Cattleya Harrisoniæ were also in fine condition. The same exhibitor staged a non-competitive group of Orchids of much merit.

Mr. H. A. Tracy, Twickenham, showed a beautiful Cattleya named Mrs. H. Rider Haggard. The petals and sepals are of the purest white. He also showed a plant of the superb Cattleya Mossiæ var. Goodsonæ.

Miscellaneous Plants.

The best tuberous-rooting Begonias were shown by G. Atkins, Esq., Manaton, East Sheen (gr. Mr. W. Hill). The flowers were almost all "singles." 2nd, A. Elsee, Esq., Burlington House, Hampton Hill (gr. Mr. H. Fleet). By far the best six Caladiums were shown by C. M. Bartlett, Esq., Uplands, East Sheen (gr. Mr. H. Hicks).

The premier exhibit of six Ferns was displayed by Sir Frederick Wigan. We noticed magnificent specimens of Davallia Mooreana and Adiantum Veitchii.

The Earl of Dysart, Ham House, Petersham (gr. Mr. T. F. Conway), easily surpassed all other competitors in the class for 24 bunches of hardy herbaceous flowers. Among others were seen splendid vases of Lysimachia velutina, Alstromerias, and a white Phlox named Lady Napier.

Roses.

As stated, the displays of Roses were not comparable with those of last year, due, no doubt, to the unfavourable season. In most of the classes the competition was between the two famous Colchester firms of Cant.

These two growers contested the largest class for 48 varieties, three blooms of each variety. In addition to a monetary prize was offered a silver Cup—known as the Gunnersbury Park Challenge Cup, given by Leopold de Rothschild, Esq. It was secured by Messrs. Ben. Cant & Sons, Colchester, whose collection contained some remarkably good blooms, notably those of Bessie Brown, Joseph Brown (an excellent trio), Frau Lilla Rautenstanuch, Mad. Cusin, and Dean Hole. 2nd, Messrs. Frank Cant & Co., Colchester.

The smaller class for twenty-four blooms was won by Messrs. Frank Cant, who had, among others, choice examples of Rosmane Gravereaux and Mons. Paul Lede. 2nd, Messrs. C. & W. H. Burch, Peterborough, who showed fine examples of Mrs. W. J. Grant, Lady Ashtown, and Dean Hole.

Messrs. Frank Cant also secured the premier prize for twelve blooms of distinct varieties and for twelve Tea Roses.

Messrs. Ben. Cant & Sons showed the best dozen H. P. Roses in the variety Mad. Gabriel Luizet; Messrs. Frank Cant following with the variety Mrs. R. G. Sharman Crawford.

In the Amateur Classes for Roses, the Rev. J. H. Pemberton, Havering-atte-Bower, beat all comers. He was an easy 1st prize winner in the class for twenty-four blooms of distinct varieties, and for the smaller class for twelve blooms. He also excelled in the open class for twelve bunches of garden Roses, having a beautiful lot, mostly of single varieties.

Decorative Classes.

As stated, the decorative exhibits were of high merit. The best dinner table decoration was arranged by Mr. James Lock (gr. to Sir C. Swinfen-Eady). The design consisted of three epergnes of Orchids.

Mrs. Brewer, Suffield House, Richmond, staged a charming design in a fancy stand. The flowers were wholly of Sweet Peas—the lavender-coloured Lady Grisel Hamilton, and the pale salmon-pink Duchess of Westminster, an excellent combination of shades. This lady also staged a charming basket of these flowers.

Messrs. **Perkins & Sons**, Coventry, had the best hand bouquet, while Miss C. B. **Cole**, The Vineyard, Feltham, arranged the best basket of flowers and foliage.

Fruit and Vegetables.

Although competition was not strong in the fruit classes some splendid produce was displayed. Sir C. **Swinfen-Eady** carried off most of the honours. He won the prize for a collection of six dishes of fruit of distinct kinds, having large and shapely bunches of Foster's Seedling and Madresfield Court Grapes, a beautiful dish of Black Tartarian Cherries, Dymond Peach, Dryden Nectarines, and a large Hero of Lockinge Melon. The prize carried with it the Lady Max Waechter's Challenge Cup. 2nd, the Earl of **Dysart**.

The best black Grapes were shown by A. **Benson**, Esq., Upper Gatton Park, Merstham (gr. Mr. W. Mancey), and the best white Grapes by Sir C. **Swinfen-Eady**, with Foster's Seedling.

A superb dish of Condor Peaches shown by Messrs. W. & E. **Wells**, Hattonhurst, Hounslow, won the 1st prize for these fruits, while a dish of Nectarine Dryden secured a similar place for the Earl of **Dysart** in the class for these fruits. The best Melon was a fruit of Hero of Lockinge, shown by Mrs. **Lewin Phillips**, East Sheen (gr. Mr. Thos. Cooper); and the best Strawberries those shown by Sir C. **Swinfen-Eady**, the variety being Royal Sovereign.

Vegetables.—In these classes were many exhibits of much merit shown by cottagers and allotment holders.

The open class for a collection of twelve vegetables saw a keen contest between Sir C. **Swinfen-Eady** and the Earl of **Dysart**, which resulted in their being placed in the order named. The 2nd prize collection contained some excellent "heads" of Magnum Bonum Cauliflower.

Col. **Bosworth**, Cedar Court, Roehampton (gr. Mr. C. Bentley) secured Messrs. Carter's prize for a collection of not fewer than nine varieties of vegetables.

Non-Competitive Exhibits.

These were numerous and good. Messrs. T. S. **Ware, Ltd.**, Feltham, occupied a large area in the largest tent with a fine display of flowering plants—Roses, herbaceous flowers, Pinks, Delphiniums, Carnations, Nicotiana hybrids, Begonias, &c.

Messrs. **Geo. Jackman & Son**, Woking, Surrey, displayed Roses and Sweet Peas. Mr. **Chas. W. Breadmore**, Winchester, set up a very large display of Sweet Peas and a number of hardy herbaceous flowers. Mr. **Henry Eckford**, Wem, Shropshire, also exhibited Sweet Peas, having a beautiful display of all the popular and latest varieties.

Mr. **Ernest Poupart**, Twickenham, displayed a bank of Sweet Peas in pots.

Mr. L. R. **Russell**, Richmond Nurseries, Richmond, showed an excellent group of ornamental shrubs, interspersed with flowering plants.

Messrs. W. **Fromow & Sons**, Sutton Court Nursery, Chiswick, staged a large circular group of ornamental Maples edged with small plants of Eurya latifolia.

One of the best non-competitive groups was arranged by Mr. **Wm. Thompson**, Sheen Nurseries, Richmond. The group was circular in shape. The centre was a light arrangement of Palms and Acer Negundo, and around were well-grown plants of Astilbe (Spiræa), Hydrangea paniculata, tuberous-rooting Begonias, &c., arranged in a setting of beautiful foliage plants.

Displays of herbaceous flowers were shown by Messrs. J. **Cheal & Sons**, Crawley; Messrs. **Geo. Bunyard & Co.**, Maidstone; and Messrs. **John Peed & Son**, West Norwood.

Obituary.

Madame Auguste van Geert.—The death at Ghent on the 23rd inst. of this lady, in her 81st year, is announced. Madame van Geert was the widow of a Ghent nurseryman well known to many of our readers as the founder of the establishment over which the much lamented Edouard Pynaert van Geert presided. The business is conducted by the family under the same style.

MARKETS.

COVENT GARDEN, June 27.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Anemone, coronaria varieties	1 6- 3 0
— fulgens, fl. pl.	3 0- 4 0
Azalea mollis, doz. bunches ...	4 0- 6 0
Calla æthiopica, per dozen	2 6- 4 0
Centaurea cyanus, doz. bunches...	2 0- 4 0
— suaveolens ...	3 0- 4 0
Coreopsis grandiflora, per doz. bunches ...	4 0- 6 0
Carnations, per dozen blooms, best American various ...	2 0- 4 0
— smaller do. ...	1 0- 2 6
— Malmaisons ...	3 0- 8 0
Cattleyas, per doz. blooms ...	8 0-10 0
Eucharis grandiflora, per doz. blooms... ...	3 0- 4 0
Gardenias, per doz. blooms... ...	1 6- 2 0
Gladiolus, various, per dz. bnchs..	9 0-12 0
— The Bride ..	5 0- 9 0
Gypsophila elegans, per doz. bunches ..	3 0- 4 0
Iris germanica, per bunch ...	0 9- 1 0
— Spanish, per doz. bunches...	1 6- 3 0
Ixias	2 6- 4 0
Lilac, per bunch ...	1 0- 2 0
Lilium auratum ...	2 6- 3 0
— candidum, per bunch	1 6- 2 0
— lancifolium, rubrum and album	1 6- 2 6
— longiflorum ...	2 6- 4 0
Lily of the Valley, p. dz. bunches	4 0- 8 0
— extra quality ...	9 0-12 0
Marguerites, white, p. dz. bunches	2 0- 3 0
— yellow, per dz. bunches ...	2 0- 3 0
Mignonette, dozen bunches ...	2 0- 3 0
Myosotis, per doz. bunches ...	1 6- 2 0
Odontoglossum crispum, per dozen blooms	2 0- 2 6
Pæonies, per doz. bunches ...	4 0- 5 0
Pelargoniums, show, per doz. bunches ...	3 0- 5 0
— Zonal, double scarlet... ...	5 0- 6 0
Poppies (Iceland), per dozen bunches ...	4 0 -5 0
— Oriental, per bunch	0 6- 1 0
— Shirley ...	0 6- 0 9
Pyrethrums, dozen bunches ...	3 0- 6 0
Ranunculus, doz. bunches ...	4 0- 6 0
Rhodanthe, per dz. bunches ...	3 0- 4 0
Roses, 12 blooms, Niphetos ...	1 0- 2 0
— Bridesmaid ...	2 0- 3 0
— Kaiserin A. Victoria ...	2 0- 4 0
— Caroline Testout	3 0- 5 0
— C. Mermet ...	1 6- 3 0
— General Jacqueminot	1 0- 2 0
— Liberty ...	2 0- 6 0
— Madame Carnot	2 6- 3 0
— Madame Chatenay	3 0- 6 0
— Mrs. J. Laing	3 0- 5 0
Statice, per dozen bunches ...	5 0- 8 0
Stephanotis, per dozen trusses	3 0- 5 0
Stocks (double white) per doz. bunches ...	2 0- 3 0
Sweet Peas, per doz. bunches ..	1 6- 4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	5 0-10 0
— — medium, bunch ...	1 6- 2 0
— —short sprays per bunch...	0 6- 0 9
— Sprengeri ...	0 6- 1 0
Adiantum cuneatum, doz. bun.	4 0- 6 0
Berberis, p. bunch	2 6- 3 0
Croton leaves, per bunch	1 0- 1 6
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	1 0- 2 0
— French, doz. bunches ...	3 0- 4 0
Galax leaves, per doz. bunches...	1 6- 2 0
Hardy foliage (various), per dozen bunches	2 0- 3 0
Hardy Grasses, per doz. bunches...	2 0- 3 0
Ivy-leaves, bronze	1 6- 2 0
— long trails per bundle... ...	1 0- 2 0
— short green, doz. bunches...	2 0- 3 0
Moss, per gross ...	5 0- 6 0
Myrtle, per dozen bunches ...	2 0- 5 0
Smilax, per dozen trails	2 0- 5 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldi, per dozen ...	4 0- 6 0
— larger	9 0-12 0
Araucaria excelsa, per dozen ...	12 0-30 0
Aspidistras, green, per dozen ...	18 0-30 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, doz.	6 0- 8 0
— tenuissimus per dozen ...	8 0-10 0
Begonias (tuberous), per dozen	5 0- 8 0
Boronia elatior, per dozen	18 0-24 0
Bouvardias, per dz.	6 0- 8 0
Calceolarias, yellow	4 0- 6 0
Chrysanthemum segetum ...	4 0- 9 0
Clematis, per doz.	8 0- 9 0
— in flower ...	18 0-24 0
Cocos Weddelliana, per dozen	9 0-18 0
Coleus	3 0- 5 0
Crassula, hybrid, per doz. ...	6 0- 9 0
— larger size ...	18 0-24 0
Crotons, per dozen	12 0-30 0
Cyperus alternifolius, dozen ...	4 0- 5 0
— laxus, per doz	4 0- 5 0
Dracænas, per doz.	9 0-24 0
Erica, per dozen...	24 0-26 0
— ventricosa magnifica ...	24 0-42 0
Euonymus, per dz.	4 0- 9 0
Ferns, in thumbs, per 100	7 0-10 0
— in small and large 60's ...	16 0-25 0
— in 48's, per doz.	4 0-10 0
— in 32's, per doz.	10 0-18 0
Ficus elastica, p. dz.	9 0-18 0
— repens, per doz.	5 0- 8 0
Fuchsias, per doz.	6 0- 9 0
Heliotrope, per dz.	4 0- 6 0
Hydrangea Hortensia, per dozen	8 0-18 0
— Thos. Hogg ...	12 0-24 0
— paniculata ...	12 0-24 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen ...	12 0-21 0
Latania borbonica, per dozen ...	12 0-18 0
Lilium longiflorum, per dozen ...	15 0-24 0
— lancifolium, per dozen ...	18 0-24 0
Lily of the Valley, per dozen ...	18 0-30 0
Lobelia	4 0- 5 0
Marguerites, white, per dozen ...	5 0- 9 0
— yellow... ...	15 0-18 0
Mignonette, per doz.	4 0- 6 0
Musk, Harrison's, per doz. ...	3 0- 5 0
Pelargoniums (Zonals), per dozen	3 0- 5 0
— Ivy-leaved, per dozen	5 0- 8 0
— show	8 0-12 0
Petunias, double, per doz. ..	5 0- 6 0
— single (in 60's only)	1 6- 2 6
Rhodanthe, per dz.	3 0- 5 0
Roses, per dozen...	12 0-18 0
Saxifraga pyramidalis, per doz.	12 0-18 0
Selaginella, dozen	4 0- 6 0
Spiræa japonica, per dozen ...	5 0-10 0
Verbena, Miss Willmott, per doz..	8 0 12 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples:—South Australian:	
— Adams' Pearmain, per case	10 6-11 0
— Jonathans, per case	13 0-16 0
— Monro's Favourite, per case	12 6-13 0
— New York Pippins, p. case	12 0-13 6
— Rymers, per case	10 0-11 0
— Wellingtons, p. case	12 0-14 6
Tasmanian per case:	
— Alexanders ...	9 6-10 0
— Sturmers ...	10 6-12 0
— French Crabs..	9 6-10 6
— Alfristons ...	9 0-10 0
— Sc. Pearmains	10 6-12 6
— Prince Alfreds	11 0 —
— N.Y. Pippins..	12 0-13 0
— Roman Beauty	10 0-12 0
Apricots (French), per box ...	0 7- 1 0
Bananas, bunch ...	
— No. 1 quality...	7 0- 9 0
— No. 2 quality...	6 0- 7 0
— Extra quality...	8 6-10 0
— Giants, per bunch	11 0-13 0
— Jamaica ...	4 6- 6 0
— Loose, per dz.	0 8- 1 3
Cherries (French), ¼ sieve... ...	3 6- 6 6
½ sieve... ...	7 0-14 0
— boxes	1 0- 2 0
— French, squares	2 0- 3 6
— English, ½ sieve	7 0-11 0
Figs, per dozen ...	2 0- 8 0
Grapes (English), Black Hambro, per lb.... ...	0 10- 1 6
— Alicante ...	1 3- 1 9
— Colmars ...	1 6- 2 0
— English, Muscat, per lb. ...	1 6- 4 0
Gooseberries (English), ½ sieve ...	3 0- 4 6
Lemons:	
— Messina, case	13 6 20 0
— Naples, p. case	30 0 40 0
Lychees, per box...	0 10- 1 0
Melons, each ...	1 0- 3 0
Nectarines, English	2 6-12 0
Nuts, Cobnuts, per doz. lb... ...	8 0 —
— Brazils, new, per cwt. ...	45 0-48 0
— Spanish, p. bag	42 0-43 0
— Barcelona, per bag	24 6 —
— Monkey Nuts, per bag ...	18 0 —
— Walnuts, dried, cwt.	35 0 —
—Chestnuts, Italian, per bag ...	13 6-15 0
— Cocoanuts, 100	10 6-13 6
Oranges, Valentia, per case ...	20 0 32 0
— Murcia ...	10 0 16 0
— Navel	11 0-12 6
— Jamaica ...	10 6-11 0
— Blood	9 6-11 6
Peaches (English), per dozen ..	2 6-15 0
Pears, stewing varieties, per ½ bushel... ...	2 6- 3 0
— stewing, crate	10 6 —
Tasmanian and Australian Pears, p. tray:	
— Winter Nelis ..	4 0-10 0
— Glou Morceau	7 0- 9 0
— Vicar of Wakefield	5 0- 8 0
— Bergamotte ...	2 6 —
— Beurré Diel ...	2 0- 4 0
— Easter Beurré	6 0 —
Pineapples, each ...	2 9- 4 6
Plums (Cape), per box	10 0 —
— French, p. box	0 6- 0 9
Raspberries, per putt.	2 0 —
Strawberries, punnetts ..	0 6- 0 9
— French, crates (4 baskets) ...	7 6-10 0
— French, crates (10 baskets) ...	8 0-10 0
— Southampton, per basket ..	1 0- 2 6

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, Green French, p. doz.	1 0- 3 6
Asparagus, per bundle:—	
— English, per bundle... ...	1 0- 2 6
Beans, French, p. lb.	0 4 —
— Broad, per pkt.	0 6 —
— Broad (English), per bush.	2 6 —
— Broad, per pad (loose)	2 0- 2 6
— Flageolet, box	1 0 —
— Home grown, per lb	0 3- 0 6
— French, p. pad	2 0- 3 0
— French, per ½ sieve	2 6- 4 0
— Channel Island	0 8 —
Beetroot, bushel ...	1 0 —
Broccoli, sprouting, per bushel	1 6- 1 9
— per doz. ...	1 0- 2 0
Cabbages, Spring, per bag ...	2 6 —
— red, per bushel	1 6- 2 0
Carrots, French pad	3 0 —
— per bag, unwashed ...	2 0- 3 0
— per dz. bnchs., washed ...	1 6 —
— new, per dozen bunches ...	5 0 —
Cauliflowers, per tally	3 0-10 0
Chow Chow, p. dz.	1 6- 2 0
Cucumbers, dozen	2 0- 2 6
Endive, per dozen	0 9- 1 0
Horseradish, foreign, per dozen bundles ...	20 0-24 0
Leeks, 12 bundles	1 6- 3 0
Lettuces, Cos, per dozen	2 0 —
— French, per dz.	0 11- 1 0
Marrows, per doz.	1 6- 2 0
Mint, per dozen ...	2 0- 3 0
Mushrooms (house) per lb.	0 8- 1 0
— Buttons, per lb.	0 8- 1 0
Mustard and Cress, per dozen pun.	1 0- 1 6
Onions (Egyptian), bag	4 6 —
— pickling, per bushel	3 6- 4 0
— French, ½ bag..	2 3 —
— Spring, dozen bunches ...	1 0- 1 6
Parsley, 12 bunches	1 0 1 6
Peas (French flats)	3 0- 6 0
— English, per bushel	4 0 —
Potatos (new):—	
Canary, cwt....	13 0-15 0
— Channel Island Kidneys ...	0 2½- 0 3
— Jersey, cwt. ...	7 0 —
— St. Malo, cwt.	6 6 —
— Lisbons, p. case	4 0 —
Rhubarb, per doz. bundles ...	2 6 —
Spring greens, per bushel	1 3 —
Salsafy, per dozen bundles ...	4 0 —
Tomatos:—	
— English, per lb.	5 6- 6 0
— per doz. lbs. ...	4 6- 5 0
— small selected	4 0- 4 6
— Seconds, per 12 lbs.... ...	3 0 —
Turnips, per doz. bunches ...	1 0- 1 6
— bags	1 0 —
— new, per dozen bunches ...	3 0- 4 0
Turnip Tops, bush.	1 0- 1 6
Watercress, per doz. bunches ..	0 4 —

Remarks.—English and foreign Cherries are dearer. English Tomatos are firm in price but likely to become cheaper towards the end of the week. Nectarines are plentiful, but Peaches are somewhat scarce. English Figs are still scarce, but a few good fruits are arriving from the Channel Islands. English hot-house Marrows are lower in price owing to a good daily supply of outdoor stuff, which can be bought at 1s. 6d. to 3s. per dozen. Trade generally is good. *E. H. Rides, Covent Garden, June 27, 1906.*

Potatos.

Lincolns, 50s. to 60s.; Dunbars, 100s.; best Scotch, 75s. to 80s.; Jerseys, 7s. to 7s. 6d.; St. Malo, 6s. 6d. to 7s.; Cherbourgs, 6s. to 6s. 6d.; Lisbons, 3s. per case.—*John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

The trade for flowering plants is now falling off, but supplies remain abundant. Well-flowered plants of the Rambling Rose Dorothy Perkins, in 48's, were making from 2s. 6d. to 3s. 6d. each. Hydrangeas are not now quite so abundant. Crassulas (Kalosanthes) in several shades of colour are seen, and I noted good plants of K. jasminæflora, also coccinea, but it is the hybrid varieties that are most extensively grown, Verbenas are now better again, and we are getting the pure white variety "Snowflake" in good plants from Mr. Sweet. Lilium longiflorum is good from several growers, and there are some good L. lancifolium rubrum and L. l. album. Show, Zonal, and Ivy-leaved Pelargoniums are plentiful in well-flowered plants; good Mignonette is not quite so common now. Saxifraga pyramidalis is still good, and there are good plants of Erica ventricosa magnifica still for sale. White and yellow Marguerites are very good. Fuchsias are fairly good. Some nice standards, with stems about 3 feet in length, are seen. Spiræa japonica and other varieties, and Heliotropiums, in both light and dark varieties, are good. Some very fine tuberous Begonias, in 48's and 60's, are seen, but the trade for them has not been so good as usual this season. In foliage plants there is but little variation.

Cut Flowers.

Irises are still very prominent, and we are now getting some of the best English (I. xiphioides) varieties; the Spanish varieties are nearly over. Poppies are good, including the Iceland, Oriental and Shirley varieties. Sweet Peas are over abundant, and with the hot weather there is a good deal of waste. Carnations of American varieties and Souvenir de la Malmaison are over plentiful, and with the low prices there is no profit on these. Two growers have expressed their intention of giving up their cultivation. Roses have been selling a little better perhaps, but supplies are still in excess of all demands, and now that Strawberries are in there is much less trade for flowers in the streets. Pæonies and Pyrethrums are arriving in immense quantities. The double white Ranunculuses from Holland are very pretty. Lilium longiflorum and L. lancifolium are down to the lowest ebb in prices now. Campanula persicifolia, both blue and white, when cut before they are too far advanced, last fairly well. Gladiolus Colvillei, in several varieties, are good. Sweet Sultan (Centaurea suaveolens) is now coming in, and those who understand that the flowers must be kept dry, find they last very well. Coreopsis grandiflora and Gaillardias are seen Double scarlet Pelargonium seems much less in demand than formerly. Stephanotis, Gardenias, Tuberoses and other short-stemmed flowers are in excess of demands. *A. H., Covent Garden Market, June 27, 1906.*

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands, for the week ending June 23, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The general character of the *weather* was fine and bright over the southern and eastern districts, but unsettled in the west and north, with frequent falls of rain in Ireland. Thunderstorms were experienced in the Midlands and north-west of England on Sunday, and on the south coast of Kent on Friday, while during the night of Saturday sharp thunderstorms, accompanied by considerable quantities of rain, were very general over England.

The *temperature* exceeded the average in all districts, the excess being greatest, 3·7° in Scotland N. and least, 0·4° in England S.W. The highest of the maxima occurred most commonly during the latter half of the week, and were as high as 81° in England S. and the Midland Counties, and 79° in England E. and N.E. Elsewhere they ranged from 78° in England N.W. and the Channel Islands to 72° in Ireland N. The minima were rather low during the earlier days of the week, but subsequently became high. The lowest readings varied from 39° in England S. and S.W. to 44° in the Channel Islands and England N.E., and to 49° in Ireland S

The *rainfall* was considerably in excess of the average in Ireland, and slightly in excess in England S.W. and N.E. In England N.W. the amount was in close agreement with the normal, while in other districts there was a deficiency.

The *bright sunshine* exceeded the average in the eastern, central, and southern parts of England, and also in Scotland N., but was deficient in all other districts. The percentage of the possible duration ranged from 66 in England S. and 58 in England E., to 25 in Scotland W., and to a little below 20 in the Irish districts.

THE WEATHER IN WEST HERTS.

A warm and dry week.—On each day and night of the past week the weather has been more or less warm for the time of year. On the warmest day the temperature in the thermometer screen rose to 78°, which is slightly higher than the previous warmest during the present summer. On the warmest night the thermometer exposed on the lawn did not fall lower than 54°, which is a high night reading for June. The ground is at the present time about 1° warmer than is seasonable, both at 1 and 2 feet deep. There was a slight fall of rain on one day, otherwise the last 10 days have been perfectly dry. There has been no measurable percolation through the bare soil gauge for over three weeks. The sun shone on an average for seven hours a day during the past week, or for three-quarters of an hour a day longer than is usual at this season. After three weeks of calm weather there came a change on the 24th to light south-westerly winds. There was about a seasonable amount of moisture in the air at 3 p.m. *E. M., Berkhamsted, June 27, 1906.*

GARDENING APPOINTMENTS.

Mr. Henry Butcher, until lately Gardener to Sir Wm. Cooke, Bart., Wheatley Park, Doncaster, as Gardener at Upper Hall, Ledbury, Herefordshire, with the same gentleman.

Mr. G. Osborn, late Gardener to F. Austin, Esq., Orchard Court, Hook, Surbiton, Surrey, as Gardener to H. Twyford, Esq., Sunney Bank, Belper, Derbyshire.

ANSWERS TO CORRESPONDENTS.

Advertisement: *J. C.* The attention of the advertisement manager shall be called to the matter. Can you furnish names and dates, otherwise it may be difficult to trace the transaction?

Bamboos: *A. C. S.* None of the Bamboos mentioned requires a very shaded position except A. nitida which likes shade, especially about mid-day in summer. All the others may be grown in full sunlight or where they are shaded during part of the day only. Watering with weak manure water occasionally is decidedly beneficial to established plants. If this be too troublesome, a top dressing of 4 to 6 inches of rotted manure should be applied. An important element in the cultivation of Bamboos is the provision of shelter from north and east winds.

British Gardeners' Association: *H. C., Beckenham.* You have overlooked the advertisements as well as the numerous announcements that have been made in these columns. The secretary is John Weathers, Talbot Villa, Talbot Road, Isleworth, Middlesex.

Budding of Roses: *Anxious.* Procure a copy of The *Calendar of Garden Operations* from the publisher of this journal, price 7½d. post free. On pages 48 and 49 the process is explained and illustrated.

Carnation: *G. Clarke.* There is no evidence of disease. The injury is due entirely to the Carnation maggot.

Cucumber: *R. L. P.* There being no evidence of fungoid or other disease, it would appear that the failure is brought about by something in the method of cultivation. Is your soil suitable and free from excessive quantities of manures? Is the atmosphere of the house kept sweet?

Ellam's Cabbage: *Ellams.* There is little doubt but that some stocks are truer than others, but we cannot recommend individual firms: you might get seeds from several, and determine for yourself which are most satisfactory.

Flannel Flower: *F. G.* The flower sent by you, and described as the Australian Flannel flower, is Actinotus Helianthi.

Foxglove: *X.* Campanulate Foxgloves are by no means uncommon and have often been figured in our columns. It is a result of the fusion of the topmost flowers into a cup-like mass with other consequent changes—but what causes the change we do not know.

Frogs in Wine Cellar: *E. B.* If you make the cellar secure against frogs getting into the cellar from out of doors, and remove the frogs that can be caught in the cellar itself, you ought to be able to get rid of them. If frogs are so unusually troublesome, the cellar is surely very damp.

Funnel on Cabbage Leaf: *F. C.* The unusual funnel-like growth is due to a union of the tissue in the early stages, which is continued as the leaf developes. We gave an illustration of a similar leaf as far back as our issue for December 8, 1849. We receive one or more such leaves every season.

Grape Spot: *H. B., Bognor, J. M.*, and *W. G. W.* The berries are affected with the "spot" disease—Gloeosporium ampelophagum. Cut out and burn the injured berries and spray the remaining ones with liver of sulphur—½ ounce to 2 gallons of water.

Grapes: *Dulwich.* Apparently infested with a fungus, but too dried and shrivelled to diagnose properly. Please send other specimens packed in damp moss.—*W. D.* The berries are shanking, and this condition is one affected by cultivation. It frequently happens when the roots are growing in an unsuitable soil. Excessively strong liquid manures will be likely to cause shanking owing to the check the vines would suffer from its use.

Liliums from the Azores: *S. F. & Co.* We believe that a white Lily, which is perhaps a variety of Lilium longiflorum, is being imported from the Azores by Mr. Thomas Rochford, and possibly other market salesmen. We have not seen the flowers.

Linnean Society: *W. F. G.* Apply to the secretary of the Society at Burlington House, Piccadilly, London, W., for particulars as to subscriptions, mode of election, &c.

Names of Plants: *J. R.* Muscari comosum.—*A. Y. L.* 1, Dendrobium stuposum; 2, Ionopsis utricularioides.—*Rip.* Trachelium cœruleum.—*E. B.* 1, Polygonum Baldschuanicum; 2, Thalictrum (send foliage); 3, Tradescantia virginica; 4, Cornus mas variegata; 5, Stachys lanata; 6. Geranium pratense; 7, Oxalis species; 8, Campanula glomerata.—*J. J. F.* Veronica Andersoni, or one of the hybrids from it.—*J. W., Cardiff.* 1, Calceolaria rugosa; 2, Calceolaria, hybrid bedding variety; 3, Tradescantia virginica; 4, Aquilegia seedling; 5, Aquilegia canadensis; 6, Campanula pulla; 7, Verbascum sp.; 8, Verbascum sp.; 9, Iris aurea; 10, A seedling Iris; 11, Iris ochroleuca; 12, Anthericnm liliago.—*Enquirer.* 1, Hemerocallis flava; 2, Kerria japonica.—*A. F.* 1, Spiræa filipendula; 2, Sidalcea malvæflora.—*Clark Bros.* Ornithopus perpusillus.—*R. A. A.* 1, Symphytum officinale; 2, Dendrobium thyrsiflorum; 3, Polygonum complexum: 4, Santolina Chamæcyparissus.—*Fenstanton.* Cattleya Mendeli.—*V. A. R.* 1, Pleurothallis elachopus; 2, Octomeria diaphana; 3, Pleurothallis macroblepharis; 4, Ionopsis paniculata; 5, Sibthorpia europæa; 6, Begonia Dregei.—*J. W. B.* A light-coloured form of Cattleya Mendeli.—*A. M.* Lapeyrousia cruenta syn. Anomatheca cruenta, a Cape Irid.—*S.* Gillenia trifoliata.—*T. A.* 1, Pteris tremula; 2, Adiantum formosum; 3, Selaginella umbrosa; 4, Asplenium lucidum; 5, Cyrtomium falcatum.—*H. J. E.* Bignonia Cherere (see *Bot. Reg.*, Vol. XV., t. 1301).—*W. N.* You send more than six; our time is precious. 1, Veronica Teucrium; 2, Saxifraga geum; 3, Carduus, not recognised; 4, Helianthemum vulgare; 5, Bocconia cordata; 6, Linaria cymbalaria; 7, Asperula odorata; 8, Valeriana officinalis; 9, Pulmonaria officinalis; 10, Vicia sepium; 11. Sedum album; 12, Sedum lydium.—*A. H.* Cephalaria tatarica.

Nectarines: *A. P.* There is no trace of fungus or other organism that would account for the gumming. It is likely that the gumming has been provoked by injury of some nature, such as the puncture of insect, &c. In any case it will be well to look at the roots in the autumn, giving them a fresh medium and one that is not likely to induce very vigorous growth.

Peas: *W. G.* Your Peas appear to be attacked with the Pea mildew. Water freely, and apply a mulching of manure directly afterwards.

Planes: *A. M.* It is not unusual for Planes to drop some of their leaves, but yours seem to be attacked with a fungus also The drainage may have been increased by the building you mention. We will report more fully later on.

Potato Disease: *Enquirer.* Two plans are open to you to prevent this disease—either to bank up the soil on either side of the haulm, and to bend over the tops to one side, taking care not to break them, or to spray thoroughly with Bordeaux mixture now, and to repeat the spraying in a fortnight's time and again after the expiration of a fortnight. We advise you to begin these operations at once, before the disease appears, and so prevent it doing mischief, but if you must wait till the disease appears you can still save a portion of the crop by either of the methods we have mentioned, but remember that prevention is much better than cure.

Repton: *W. t. B.* We are not aware of any recent edition.

Ribes: *T. W.* We think there must have been some mistake in supposing the plant to have been a sport from R. sanguineum. The leaves you send are more like those of Ribes alpinum var. foliis aureis.

Rose Disease: *J. C.* The leaves are infected with a fungus—Actinonema rosæ. Spraying with solution of potassium sulphide is the best remedy. Collect and burn all diseased leaves in autumn.

Situation in Canada: *C. W.* Insert an advertisement in this paper or in *The Canadian Horticulturist*, published in Toronto.

Spring Water: *A. G. S.* If the water does not contain an excessive quantity of lime and is not therefore "hard," it requires nothing further than the treatment it is now given, the exposure in a tub or tank being very beneficial. If on the contrary it is hard, then it might be well to add more lime which will have the effect of throwing down the lime already contained in the water.

Table Decorations: *W. Treseder.* If you read our report again, you will see that we stated the medal was a "Silver Flora," as you describe it.

Communications Received.—R. L. M Cogniaux The Garten Welt—H. J. G.—J. W.—T. W.—Lord L.—H. Eckford—S. M. B.—J. G.—W. T.—A. M.—J. Mc.—H. D—T. K.—D. A. F. Boskoop—H. E.—W. H. B.—H. A. S. Wistaria—J. H.—S. A.—J. K.—A. D.—F. M.—I. I.